Transcript from May 21, 1997 Public Meeting

Speaker 8: Wallace Meyers

1 I have a couple of concerns that I would like to express here. I'll present my concerns further in writing.

One of my concerns is the jurisdiction of the order - allowing the Port to do the study under their guidance and supervision is wrong. I believe that the Port of Seattle should certainly fund the study, but it should be under a separate independent organization or group that will do the study. 1

2 Another concern is the drawdown in the future extreme drawdowns during emergencies when the water will flow and go from one area to another rather rapidly. 2

3 Another comment I would like to make under Findings of Fact of the Order, it says "numerous facilities including passenger terminals, baggage cargo facilities, ground transportation, and facilities for aircraft maintenance". It seems to me that a couple of things might be left out here, and I think one of the major items that should be added in there is the second runway - and that was built in 1972. 3

Response to comments by Wallace Meyers
Comments were presented orally at the May 21, 1997 Public Meeting.

Comment #1:
A separate independent organization or group should do the study rather than it being done under the Port of Seattle's guidance and supervision, although the Port should fund the study.

Response #1:
The groundwater study is a remedial action and thus must be done under State cleanup regulations. Under these regulations, potentially liable persons (PLPs) that pollute the environment are liable for the pollution and the burden is on the polluter to address their own pollution. On the surface that process may appear to be a conflict of interest, but that is why there are cleanup regulations that mandate specific requirements and processes that must be followed by all that conduct cleanup actions. There are no lawful means by which Ecology could implement a scenario where the Port or any other PLP would fund a cleanup action, but neither Ecology nor the PLP would be involved in that cleanup action.

The groundwater study is being conducted under the legal mechanism of the Agreed Order, and Ecology has authority over the groundwater study and must ultimately approve and sign off on it. Furthermore, as part of the agreed-order process, all aspects of the groundwater study are open to public scrutiny and comment. It is Ecology's hope that in particular, those in the scientific community with appropriate expertise and knowledge will provide some of that scrutiny and comment.

Comment #2:
The situation of future extreme drawdowns during emergencies when the water will flow from one area to another rapidly is of concern.

Response #2:
The groundwater flow model will incorporate and consider the effects that the pumping of the large public water supply wells will have on groundwater flow. Modeling simulates groundwater flow in the subsurface, and during the modeling process the greatest variations found under actual conditions such as extreme drawdown are simulated.

Comment #3:
The Agreed Order mentions in the Findings of Fact section passenger terminals, baggage and cargo, ground transportation, aircraft maintenance, and fueling facilities at the airport. The second runway should also be mentioned.

Response #3:
The intent of that language in the Agreed Order was to convey the fact that the facilities at the airport that support aircraft operations, and in particular the facilities that store, handle, utilize, and have released hazardous substances; are located in the southeast

quadrant of the airport (AOMA). It is not clear why the second runway would be included in that language as another "facility" and the comment offers no rationale as to why the second runway should be added.

Transcript from May 21, 1997 Public Meeting

Speaker 9: Ben Stark

On Feb. 25, 1997, I attended a meeting with Port Commissioners. Davis, Shell, and Grant were there. The agenda was, this came up late in the meeting after the press had left, the agenda was brought up to approve this order, first point. The second point was to authorize the executive director to hire outside professional services with associated group of scientists to provide hydrological services necessary to complete Phase I in the order. Third point was to authorize the staff to do the lobbying and prepare plans and so forth, for the study.

Alternatives considered were:
1. Recommended alternative is to enter and accomplish the proposed order to affirm the STIA groundwater study generating more certainty about the impacts to STIA area of groundwater around the airport and operations, and satisfy the groundwater study condition of the governor certification.

2. To do the study on your own without the concurrence of Ecology and which would not satisfy the condition of the governor certification.

3. Do nothing. This alternative could result in DOE initiation of MTCA enforcement action against the Port and would not satisfy the condition of the governor certification.

When this came up for discussion, Commissioner Shell asked if anyone was here from Ecology. No. He also noticed the press had left. Shell questioned spending this money to make people feel good. He said he is tired of paying for other people to cover themselves. He asked what would happen if he voted NO - "lack of feeling," he said. He might not get the governor's approval of a third runway. Shell said that next time they would both vote NO.

I believe with this attitude the Port will only hire any team who tell them what they want to hear. [I want Ecology to do the study, hire the consultants, do the modeling,] and require 13-month ? as needed. I object to your Agreed Order as presently proposed. Sorry I ran over time.

Ben G. Stark
1310 S. 230th Street
Des Moines, WA 98198
(206)878-8466

June 12, 1997

Roger Nye
Department of Ecology
3190 160th Avenue Southeast
Bellevue, WA 98008-5452

Re: Proposed Agreed Order 97TC-N122, for SeaTac Airport Ground Water Study and Pollution Prevention

Dear Mr. Nye:

As I stated at your May 21st public meeting in Burien I was present at the February 25, 1997 Port Commission meeting when this order was discussed and authorized by the Port Commissioners. It was clear from the Commissioner's discussion the Port does not enter into this agreement with a cooperative attitude. The Commissioners only agreed to authorize this "Agreed Order" when they were informed by the staff that this is a prerequisite to receiving the Governor's Letter of Authorization for construction of the 3rd runway. In fact when Commissioner Schel asked, "What if we don't sign it?" Michael Feldman replied, "Then you may not get the Governor's letter for the 3rd runway." Only then did the three commissioners present, Schel, Grant and Davis vote to authorize the order. Clearly the Port is not undertaking this study to protect the public's water. Their only interest is in pushing their own agenda of SeaTac expansion and the 3rd runway.

The cleanup work now underway was started only because of a citizens lawsuit. The Port does nothing for the local community, except to further it's own goals. It has manipulated the political process repeatedly through the legislature and the Puget Sound Regional Council and addressed local concerns only when forced to do so.

As stated in your "Order" contaminates of gasoline, industrial solvents, mineral spirits, lubricating oil, aircraft deicing fluid and jet fuel are known to exist now in the perched ground water and/or soil in at least twelve different sites and the QVA aquifer is impacted at four of the twelve known sites within the airport operations and maintenance area, AOMA. The order states that the ground water flows in various directions and the QVA aquifer flows predominantly to the west at a depth of about 90 feet.

2 The proposed study area is limited to the AOMA in the southeast corner of the airport. This is not sufficient. The entire airport should be included in the study. Test wells should be drilled west of the contaminated area in or between the runways. There is no acceptable reason for not investigating this area, especially since the QVA aquifer flows to the west. During the last few years the Port has done substantial concrete work and lighting installation on the runways without undue disruption of their operations by working at night. There is no reason drilling could not be scheduled and performed in these areas. In addition drilling can easily be done between the westerly runway and 12th avenue south. 2

3 As stated in the Port's recent 3rd runway EIS seeps are evident from the slopes west of 12th south. It seems reasonable to assume that these seeps originate from the ground water beneath the airport, as do Miller, Des Moines and Walker Creeks all of which should be monitored regularly. 3

2 The airport has been in operation for over 50 years. The fuel storage and handling facilities are known to have leaked for years. Therefore it seems imperative that test wells be drilled and monitored in all areas which now, or in the future may, suffer water contamination. 2

4 Actual drilling and regular water sampling are the only way to actually know what is in the water. Computer modeling is only as good as the information and guess work fed to the model and may prove too late to be inadequate. Whereas contaminated samples would be conclusive and steps could be taken immediately to pump out hazardous substances. 4

5 In addition to contamination on the airport it is now known the Port has removed houses in the surrounding area without removing their partly filled underground oil tanks. A list of all remaining buried oil tanks in the area between south 128th Street and south 216th Street should be compiled and the tanks removed now. This work should be included in the order. 5

As stated above the Port is not agreeing to this order in a spirit of cooperation. Therefore it is unrealistic to expect the Port to hire any consultants, biologists, engineers or contractors without assurance the Port will be told what they want to hear and that 6 the study will produce minimal requirements for them to proceed with filling on the west side and thereby covering up any future hazardous waste seepage, at least until the 3rd runway is built. No fill should be deposited anywhere for the 3rd runway until a thourough cleanup has been completed. 6

The Department of Ecology is to be commended for the work they have put into this project so far. However, 4 the Department should not enter into this order as written, but should push for more drilling and continuous sampling. 4 The work and the study should be performed by the Department of Ecology or by contractors hired by the Department of Ecology. 1 The Port should not be allowed in any way to control the study results.

The public deserves all the protection of their water provided for under Washington State Law.

Sincerely Yours,

Ben G. Stark

Ben G. Stark

cc. Governor Gary Locke
Ms. Marianne Deppman Department of Ecology
Ms. Carla Skog, Department of Ecology

Response to comments by Ben G. Stark
Comments were presented orally at the May 21, 1997 Public Meeting and in a letter dated 6/12/97.

Comment #1:
The Department of Ecology and/or consultants hired by the agency should do the modeling and complete the groundwater study because, as per a Port Commission meeting where this Agreed Order was discussed, it does not appear the Port of Seattle has entered into it with a cooperative attitude.

Response #1:
The groundwater study is an investigative remedial action being done under State cleanup regulations. The Department of Ecology does not generally have the resources to carry out remedial actions on its own. The agency only does this if the contamination poses significant and immediate risk and the potentially liable person (PLP) that caused the contamination does not exist, does not have resources, or refuses to take action. The usual process when Ecology elects to instigate or become directly involved in particular remedial actions is that a legal agreement (Agreed Order in this case) is established between the PLP and Ecology. The PLP agrees to fund and conduct the remedial actions specified in the legal agreement and Ecology's role is one of oversight and exercising final approval over the work that is done. There is no way Ecology could require a PLP to directly fund remedial actions, but then remain uninvolved in those remedial actions.

Ecology must review and approve of all the actions stipulated in the Agreed Order that are taken by the Port before the Order can be concluded. Additionally, all the actions stipulated in the Order that are completed must be presented for additional public review and comment and then those comments addressed before the Order can be concluded.

Comment #2:
The groundwater study should include the entire airport and not be limited to the AOMA in the southeast corner of the airport. Since the fuel storage and handling facilities are known to have leaked for years, test wells should be drilled and monitored in all areas where groundwater is now or will be contaminated. In particular wells should be drilled west of the AOMA between and/or west of the runways because the Qva aquifer flows to the west.

Response #2:
Part 1 of the Responsiveness Summary provides response to this comment.

The groundwater study will not be limited to the AOMA but will include the entire airport and additional surrounding area as well that encompasses the receptors (drinking water supply wells and surface waters) identified in the Agreed Order. This larger study area is required to accomplish the purpose of the groundwater study, which is to determine if the contaminated groundwater at the airport (which originates within the AOMA) has affected or could affect these receptors.

As documented in voluminous reports, there have been many test wells drilled and monitored over the years to test for and delineate contamination in groundwater that was caused by fuel storage and handling facilities and other sources. The groundwater study may indicate additional areas where test wells should be drilled and monitored and the wells could be west of the AOMA as the comment states.

Comment #3:
Miller, Walker, Des Moines Creeks and seeps west of the airport should all be monitored regularly because these waters originate from the ground water beneath the airport.

Response #3:
Groundwater that has flowed beneath the airport surely contributes to these waters but infiltrating precipitation and locally perched groundwater contribute also. The hydrogeologic situation west of the airport is complex and varies from one location to another. If the groundwater study indicates contamination in groundwater coming from the airport has possibly already reached the seeps and creeks, then sampling of these waters in select locations indicated by the study could be appropriate. Current information from known areas of groundwater contamination at the airport however, indicates that the contamination, while moving westward in the groundwater (Qva aquifer), has not as yet traveled outside the AOMA. It must be realized that groundwater and contaminant flow in the subsurface is very slow and that there are natural mechanisms that attenuate the concentrations of contaminants along the transport pathway.

The surface waters must be protected so, rather than monitoring these waters directly, it is much preferable to implement monitoring and/or remedial actions of the groundwater if required up gradient to the east before contamination ever seeps into these waters.

Comment #4:
The computer modeling is only as good as the information and guesswork fed to the model and it may prove to be inadequate. Instead, there should be more drilling and continuous water sampling because actual drilling and sampling is the only way to actually know what is in the water. Contaminated samples would be conclusive and hazardous substances could then be pumped out immediately.

Response #4:
The information utilized to construct the groundwater flow model will consist of geologic data from well logs that have been drilled throughout the airport and surrounding area. There is some interpretation involved in utilizing these data, but it is “hard” data derived by sampling in the field, not by guesswork. When running the models, there will be some guesswork involved in the hydrogeological and contaminant transport parameters that are input to the model but in the modeling process, these parameters can be varied over reasonable ranges and the effects on the outcome of the modeling observed. A “sensitivity analyses” on the model will determine which parameters most influence the outcome of the model, and if more precision is needed for particular parameters, steps will be taken to acquire the needed precision.

The modeling alone is not sufficient however and additional drilling and sampling will be done to confirm the results of the model and to determine impacts and evaluate risk from known and unknown contaminated areas in the airport. A basic purpose of the modeling is to optimize any additional drilling and sampling. Ecology agrees that there should be more drilling and sampling at the airport, but not to the extent of drilling hundreds of wells throughout the AOMA or entire airport. As stated in the Agreed Order there are reasons why such a massive ubiquitous drilling program is not warranted or feasible at this time.

Removing hazardous substances from the environment is unfortunately not as straightforward as simply "pumping them out". When a hazardous substance such as fuel for example, is released to the environment part of it "sticks" to the soil particles, part of it remains in liquid form, and part of it dissolves in the groundwater. The part of the hazardous substance that remains in liquid form can be partially pumped out, but more elaborate remedial measures that take a long time are required to remove the contamination in the soil and dissolved in the groundwater.

Comment #5:
The Agreed Order should include compiling a list of and removing all the home heating oil tanks that were abandoned in the areas surrounding the airport (between south 128th street and south 216th street) where the Port bought the land and removed the houses.

Response #5:
Part 1 of the Responsiveness Summary provides response to this comment.

State Representative Karen Kaiser made a direct request to Ecology Director, Mr. Tom Fitzsimmons to address environmental issues posed by these abandoned tanks. Ecology has already evaluated the situation regarding these tanks and provided a formal written response to Representative Kaiser. A copy of that response is included in this Responsiveness Summary as an attachment to Representative Kaiser's written comments on the groundwater study. The upshot of the response to Representative Kaiser is that these tanks, being small finite sources of contamination scattered throughout a large area, do not appear to pose a threat to ground or surface waters. Furthermore, the extensive effort that would be required to find all these tanks now is not warranted.

Comment #6:
No fill should be deposited anywhere for the Third Runway until a thorough cleanup has been completed because any future hazardous waste seepage will be covered up.

Response #6:
It is not necessary to preserve the seeps for monitoring purposes. If the groundwater study indicates contaminants in groundwater from the airport could reach surface waters west of the airport, or already have, monitoring wells will be installed and/or more extensive remedial actions will be implemented east of the seeps and the creeks.

Transcript from May 21, 1997 Public Meeting

Speaker 10: Kurt Kraft

I'm here tonight to express Normandy Park Community Club's concerns of an Agreed order of groundwater study proposals. The Normandy Park Community Club essentially has 3 concerns:

1. The groundwater study proposal has had little or no public input, and further it contains little or no public input provisions for the future. We find this situation unacceptable.

2. As we believe that the nature and extent of the groundwater modeling plan is insufficient to accurately predict true water flow for the extent of the groundwater contamination. We believe that the level of contamination sampling must be significantly increased before any ongoing or future cleanup efforts are allowed to be reduced or eliminated. As proposed the modeling provisions are not protective of public interest.

3. This proposal allows the Qva aquifer to be used as a private waste disposal site by the Port of Seattle and its tenants. The aquifer is a public asset and as such the Department of Ecology should not be satisfied to enter into this agreement with the Port.

Thank you.

Response to comments by Kurt Kraft on behalf of the Normandy Park Community Club
Comments were presented orally at the May 21, 1997 Public Meeting.

Comment #1:
The low level of public input allowed in the groundwater study proposal both in the past and in the future is unacceptable.

Response #1:
Part 1 of the Responsiveness Summary provides response to this comment.

It is difficult to understand this comment given that Ecology received and answered hundreds of public comments on Phase I of the Agreed Order, and that a further opportunity for public comment will be afforded on Phase II the Agreed Order.

Comment #2:
The modeling is not protective of public interest because given its nature and extent; the modeling is insufficient to accurately predict true water flow for the extent of the groundwater contamination. The level of contamination sampling must be significantly increased before ongoing or future cleanup efforts are allowed to be reduced or eliminated.

Response #2:
No modeling can predict true groundwater flow in the subsurface environment with absolute accuracy. The groundwater flow model will encompass the AOMA, the whole airport, and the locations of receptors. Given this large extent and the extensive database that must be used to construct the model, the approximations and predictions of the model will more than suffice to evaluate contaminant transport in groundwater throughout the area of the airport. Furthermore, the results of the model (Phase I of the Agreed Order) will be confirmed by sampling as appropriate during Phase II.

The needed level of contamination sampling is controlled by site-specific conditions in known areas of contamination. A purpose of the modeling is to define locations associated with potential unknown areas at the airport where contamination sampling in groundwater could be needed to determine impacts and evaluate risk. Evaluating the risks posed by contamination is a fundamental element in the cleanup process and can be accomplished by modeling, by increased contamination sampling, or both. There are remedial actions and timelines appropriate for high-risk sites and other remedial actions and timelines appropriate for low-risk sites. Evaluating risk determines the appropriate remedial actions and timelines for particular sites, but it cannot reduce or eliminate future cleanup actions.

Comment #3:
The Department of Ecology should not enter into this agreement with the Port of Seattle because it allows the Qva aquifer, a public asset, to be used as a private waste disposal site.

Response #3:
Response to this comment is provided in Part 1 of the Responsiveness Summary.

The purpose of the groundwater study is to evaluate environmental risk possibly posed by contamination in groundwater at Sea-Tac Airport. If the results of the groundwater study demonstrate the risk to receptors is low then ostensibly the notion is that this would allow groundwater at the airport to be used as the Port's private waste disposal site. If this notion is true at Sea-Tac Airport then it has to be true everywhere else as well, not just at the airport. If this notion is true, then every facility in the state that has contaminated groundwater where the risk to receptors is low could use the groundwater beneath it as a private waste disposal site and there must be a fundamental, global flaw in how these regulations work. The regulations don't work that way, there is no fundamental flaw, and this notion is nonsensical and not true.

Transcript from May 21, 1997 Public Meeting

Speaker 11: Al Furney

Good evening, my name is Al Furney. I will break this up into two segments, two minutes for "what is wrong with this picture?" and another two minutes for "what I think we need". Here, I'm speaking for myself personally, but hopefully reflect the same community interests here.

The framework of the order and the context in which it is being carried out holds a number of serious disadvantages for the community and advantages for the Port of Seattle. The proposed degree order is issued under the authority of RCW 70.105D also known as MTCA, the Model Toxics Control Act. It defines the entire airport as a MTCA facility. The DOE attempts to address ongoing releases from fuel-related and other operational facilities to be dealt with strictly under MTCA. It's not appropriate to apply this particular law this way and it will allow wrong standards being applied to ongoing releases of contaminants to ground water.

Independent cleanup actions like those done by the Port of Seattle are not exempt from the provisions of the groundwater law WAC 173-200. The proposed Agreed Order ignores the stringent and more comprehensive provisions of the Washington State Groundwater Law. They have effectively - this is an attempt to shield the groundwater law through the application of another less onerous and less stringent law. The practical effect of this scheme is to eliminate much of the protection provided by the groundwater law. Only the identified surface water receptors are identified in this order. The groundwater law applies to all groundwater distribution throughout the aquifer, not the select receptors that are identified in the proposed Agreed Order. As a result of this proposal anti-degradation standards are not applied to prevent harm to groundwater.

As proposals for what should happen here, in my view, we want a more comprehensive public participation program. We want the committee involved in the program now. We should have been involved 2 years ago when these discussions started. We want the provisions of the state groundwater law applied. We want DOE to restrict its application of MTCA to hazardous waste sites that have been identified. We'd like to amend the findings of fact. One of the findings of fact stipulates that the land use dispute currently underway between the Port of Seattle and the

surrounding jurisdictions should be pre-empted for prejudice by the finding that the Port has local land use controls. That is a provision in the agreed order that is unacceptable to the local communities.] 34

3 [The modeling scheme is defective (as Mayor Jahveri pointed out) in the project and scope of the study is limited to a restricted area of the airport that's non-representative of the airport site.] 3 And I echo his comments of the
8 [Burien Mitigation Study which identified, I believe, ten neighborhoods in Burien which would be impacted by the effects of the degradation of the Highline Aquifer and there is no remediation proposed in the Agreed Order related to that issue.] 8 And finally going directly to 35 [the language on page 24 of the Agreed Order that basically preempts appeals of the findings of this proposed Agreed Order to higher authorities including the Pollution Control Hearings Board.] 35

I have no further comments, thank you.

FROM: Allan M. Furney
24718 Marine View Drive South
Des Moines, WA 98198
(206) 824-2406

RECEIVED
JUN 12 1997
DEPT. OF ECOLOGY

June 11, 1997

TO: Ms. Marianne Deppman, Public Involvement Specialist
Washington State Department of Ecology (DOE)
Northwest Regional Office
3190 - 160th Avenue SE
Bellevue, WA 98008-3452

SUBJECT. Proposed Agreed Order #97TC-N122 between POS and Ecology

Dear Ms. Deppman:

The Regional Commission on Airport Affairs would like to express grave reservations concerning the proposed Agreed Order between the Washington State Department of Ecology (DOE) and the Port of Seattle (POS) related to Seattle-Tacoma International Airport.

BACKGROUND

The stated purpose of the proposed Agreed Order is to define the nature and extent of groundwater in the airport area, determine groundwater contamination migration potential in the Southeast quadrant of the airport and implement pollution prevention or Best Management Practices to reduce ongoing releases from the airport and its tenants in a limited area of the airport.

The proposed Agreed Order has been the subject of discussions and negotiations between Ecology and POS for the last two years, all without the benefit of public involvement. The first phase of the proposal order involves a study by POS of groundwater locations and flows including which includes measuring water levels in wells located on and adjacent to the airport. Also included in Phase I is a search of historical records to determine sources and amounts of pollution in the Aircraft Operations and Maintenance Area (a half mile square area in the Southeast quadrant of the airport). The data from the study will be used to do groundwater modeling. The model will try to determine if pollution sources (primarily fuel) in the AOMA (the Southeast quadrant) is likely to impact sensitive receptors surrounding the airport. Such receptors would be Des Moines Creek, Miller Creek, Bow Lake and any off-site drinking water supply wells. If the model shows polluted groundwater would stay within the airport area and not reach sensitive receptors, no other work would be required of POS.

The second phase of the proposed study requires the implementation of pollution prevention or Best Management Practices (BMP's) which will be a joint effort between Ecology and Port to communicate with the owners, operators of facilities such as fuel racks, pipelines and Underground Storage Tank systems. There are also requirements to create data bases and issue reports for a five year period following the issuance of the

Agreed Order.

If the study discussed in Phase I shows there is a potential for polluted groundwater to reach a sensitive receptor. POS would be required to do a third phase. Phase III consists of a ground water monitoring study which would require sampling of wells for a limited number of organic and inorganic pollutants, placement of new wells and use of the resulting data to check the previous model results. If the additional study shows that pollution is leaving the site or is impacting the identified receptors, corrective action could be required.] 1

WASHINGTON STATE'S GROUNDWATER LAW

Chapter 173-200 of Washington Administrative Code (WAC) is titled WATER QUALITY STANDARDS FOR GROUND WATERS OF THE STATE OF WASHINGTON. WAC 173-200 implements chapter 90.48 RCW, the Water Pollution Control Act and chapter 90.54 RCW, the Water Resources Act of 1971. This chapter applies to all ground waters of the state that occur in a saturated zone or stratum beneath the surface of land or below a surface water body. The goal of this chapter is to maintain the highest quality of the state's ground waters and protect existing and future beneficial uses of the ground water through the reduction or elimination of the discharge of contaminants to the state's ground waters.

To implement this goal, this chapter establishes ground water quality standards which, together with the state's technology-based treatment requirements, provide for the protection of the environment and human health and protection of existing and future beneficial uses of ground waters.

Particular sections in the groundwater law establish requirements for an "antidegradation policy" to protect groundwater (Section 173-200-030); "criteria" to protect groundwater (Section 173-200-040); "enforcement limits" (Section 173-200-050); "points of compliance" for protection limits (Section 173-200-060); establish "early warning values" (Section 173-200-070); requirements for "evaluation" (Section 173-200-080); the establishment of "special protection areas" (Section 173-200-090); and provides for "implementation and enforcement" of the State groundwater law (Section 173-200-100). A brief description of these sections follows:

WAC 173-200-030 provides for an "Antidegradation policy to protect groundwater . The goals of the antidegradation policy of the state of Washington is to ensure the purity of the state's ground waters and to protect the natural environment. The antidegradation policy establishes that "existing and future beneficial uses shall be maintained and protected and degradation of ground water quality that would interfere with or become injurious to beneficial uses shall not be allowed." and that "degradation shall not be allowed of high quality ground waters" The regulation provides that "existing water quality shall be protected, and contaminants that will reduce the existing quality thereof shall not be allowed to enter such waters, except in those instances where it can be demonstrated to the department's satisfaction that:

(i) An overriding consideration of the public interest will be served: and

(ii) All contaminants proposed for entry into said ground waters shall be provided with all known, available, and reasonable methods of prevention, control, and treatment prior to entry.

WAC 173-200-040 provides criteria to establish maximum contaminant concentrations for the protection of ground water. This regulation provides that "[d]rinking water is the beneficial use generally requiring the highest quality of ground water." The criteria applied to all ground waters in the state of Washington: include requirements that "[g]round water concentrations shall not exceed the criteria for carcinogens in groundwater with concentrations anticipated to result in a total incremental human cancer risk of less than 1 in 1.000.000.

WAC 173-200-050 establishes enforcement limits which are values assigned for the purposes of regulating contaminants in order to protect existing ground water quality and to prevent ground water pollution. Enforcement limits are based on all known, available, and reasonable methods of prevention, control, and treatment must be met at the point of compliance. In establishing enforcement limits DOE must consider:

". . . the antidegradation policy; establishment of an enforcement limit as near the natural ground water quality as practical" . . .

"Overall protection of human health and the environment" . . .

"Whether the potentially affected area has been designated as a special protection area" . . .

"Protection of existing and future beneficial uses" . . .

"Effects of the presence of multiple chemicals, multiple exposure pathways in accordance with subsection (5) of this section, and toxicity of individual contaminants" . . .

"Federal, state, tribal, and local land use plans, policies, or ordinances including wellhead protection programs" . . .

"Pollution of other media such as soils or surface waters" . . .

WAC 173-200-060 provides requirements for establishing the "Point of compliance" which is the location where the enforcement limit(s) are measured to determine if they have been exceeded. The point of compliance shall be established in the ground water as near the source as technically, hydrogeologically, and geographically feasible. Compliance with the enforcement limits must be "maintained throughout the site from the uppermost level of the saturated zone extending vertically to the lowest depth that could potentially be affected by an activity." Alternative points of compliance, cannot be established at locations some distance from the source up unless: "[i]n determining an alternative point of compliance, the department shall consider, at a minimum, the following factors:"

(i) Effectiveness of all known, available, and reasonable methods of prevention, control, and treatment;

(ii) The contaminant volume, type, mobility, and characteristics;

(iii) Design and life span of the activity;

(iv) Existing and anticipated land and ground water uses; and

(v) Remedial options if an enforcement level is exceeded at the point of compliance.

(emphasis added)

2 [It is clear from the above provisions that the point of compliance in the proposed Agreed Order are well defined under the State's Groundwater Law. Establishment and definition of points of compliance in the proposed Agreed Order under definitions established according to the MTCA law is inappropriate.] 2

WAC 173-200-070 provides requirements for the early detection of increasing contaminant concentrations prior to reaching levels that approach or exceed enforcement limits.

(1) The purpose of an early warning value is to provide early detection of increasing contaminant concentrations that may approach or exceed enforcement limits.

(2) Whenever an enforcement limit is established above background ground water quality, an early warning value may be established, as appropriate.

(3) An early warning value shall be required when an alternative point of compliance is established unless technical constraints would prohibit establishment of an early warning value.

(4) An early warning value shall be established as a percentage of the enforcement limit upon consideration by the department of factors including, but not limited to, the following:

(a) The enforcement limit relative to background ground water quality;

(b) The availability, reliability, and reasonableness of analytical methods;

(c) The chemical, physical, and biological characteristics of the contaminants;

(d) The reliability of all known, available, and reasonable methods of prevention, control, and treatment;

(e) The anticipated increases in contaminant levels at the point of compliance; and

(f) The potential harm to existing and future beneficial uses.

(5) It shall not be considered a violation of these rules when contaminants are detected in concentrations exceeding an early warning value, but not exceeding an enforcement limit, unless there is failure to notify the department or respond as required in accordance with subsection (6) of this section.

(6) The following procedures apply when a contaminant is detected at a point of compliance or an alternative point of compliance and an early warning value is attained or exceeded.

(a) The permit holder or responsible person shall notify the department, in writing, within ten calendar days from detection of the early warning value, that the early warning value has been attained or exceeded. The notification shall contain, at a minimum, the following information:

(i) The concentrations of contaminants that attained or exceeded early warning values;

(ii) Concentrations of other contaminants monitored;

(iii) The location(s) and date(s) sampled; and

(iv) Concentrations of contaminants determined during previous sampling events.

(b) When notification is received, the department may require the permit holder or responsible person to perform one or more of the following:

(i) Take no action.

(ii) Resample to verify results.

(iii) Increase monitoring or modify the monitoring plan or evaluation procedures.

(iv) Develop and implement a trend analysis to determine the likelihood of exceeding the enforcement limit.

(v) Prepare and submit a report documenting the changes in ground water quality and discuss and propose alternative methods of operation that will reduce impacts to ground water.

(vi) Take such actions as the department deems necessary, if the department determines that there is a likelihood of exceeding an enforcement limit at the point of compliance.

WAC 173-200-080 establishes minimum requirements for evaluating the impacts of an activity on the ground water quality. If the department determines a potential to pollute the ground water exists, the department shall request a permit holder or responsible person to prepare and submit for departmental approval a ground water quality evaluation program

for its activity. Each evaluation program shall be based on soil and hydrogeologic characteristics and be capable of assessing impacts on ground water at the point of compliance.

(3) A ground water evaluation program approved by the department may include, but not be limited to, any of the following:

(a) Ground water monitoring for a specific activity;

(b) Ground water monitoring at selected sites for a group of activities;

(c) Monitoring of the vadose zone;

(d) Evaluation and monitoring of effluent quality;

(e) Evaluation within a treatment process;

(f) Evaluation of management practices.

(4) In the evaluation program the permit holder or responsible person shall include information on the following:

(a) The chemical, physical, and biological characteristics of the contaminants;

(b) The availability and adequacy of analytical methods;

(c) The complexity and capability of assessing the hydrogeologic system;

(d) The reliability of all known, available, and reasonable methods of prevention, control, and treatment;

(e) The location of the point or points of compliance or alternative point of compliance; and

(f) Such other information that the department deems necessary to achieve the objectives of this chapter.

2 [RCAA feels it is important to note that an evaluation program soliciting public input for establishment of the point of compliance for the proposed Agreed Order has not yet been conducted.] We note that this statute provides that for those activities for which the department has not issued permits and that have the potential to pollute the ground water, evaluation shall be conducted according to the following:

(a) Evaluation procedures shall be included in department guidelines, policies, and best management practices to ensure that an adequate determination of compliance with this chapter can be made;

(b) For those activities regulated by other agencies but not regulated by department

rule, the department will pursue evaluation of the activity through a memorandum of understanding with the regulating agency.

WAC 173-200-090 provides that "Special protection areas" be established to identify and designate ground waters that require special consideration or increased protection because of one or more unique characteristics.

> *The department is required to consider the unique characteristics of a special protection area when regulating activities, developing regulations, guidelines, and policies, and when prioritizing department resources for ground water quality protection programs. Characteristics which guide designation of a special protection areas for groundwater include "recharge areas and wellhead protection areas, that are vulnerable to pollution because of hydrogeologic characteristics" Special protection areas may be proposed for designation at any time by the department upon its own initiative or at the request of a federal agency, another state agency, an Indian tribe, or local government.*
>
> (emphasis added)

WAC 173-200-100 provides for "implementation and enforcement" for all ground waters to meet the requirements of this chapter at all places and at all times. This chapter shall be enforced through all legal, equitable, and other methods available to the department including, but not limited to: Issuance of state waste discharge permits, other departmental permits, regulatory orders, court actions, review and approval of plans and specifications, evaluation of compliance with all known, available, and reasonable methods of prevention, control, and treatment of a waste prior to discharge, and pursuit of memoranda of understanding between the department and other regulatory agencies.

> *(4) Permits issued or reissued by the department shall be conditioned in such a manner as to authorize only activities that will not cause violations of this chapter.*
>
> *(a) Any applicant for any departmental permit shall evaluate the potential impact of its proposed activity on the ground water quality.*
>
> *(b) For reissued permits, the permit holder shall evaluate the impacts of its activities on ground water quality, and, if necessary to achieve compliance with ground water quality enforcement limits, determine a department approved schedule of compliance.*
>
> *(5) For permit holders in compliance with the terms and conditions of a department permit and whose activity violates this chapter, the department is electing, from among the enforcement mechanisms available to it for the enforcement of WAC 173-200-040 and 173-200-050 , to precede any civil or criminal penalty with a compliance order or permit modification.*
>
> *(6) The department shall pursue memoranda of understanding with other state agencies to develop policies and rules that will require all known, available, and reasonable methods of prevention, control, and treatment to achieve compliance with this chapter. Departmental orders, memoranda of understanding, and best management practices shall be modified by the department whenever an activity*

authorized by such orders or BMPs or pursuant to such memoranda of understanding violates this chapter.

(7) The department shall pursue memoranda of understanding with other state agencies, federal agencies, and tribal authorities to coordinate ground water management activities.

(8) For persons whose activity violates this chapter but is in compliance with best management practices adopted by rule in chapter 248-96 WAC, WAC 173-304-300 (4), RCW 15.58.150 (2)(c), WAC 16-228-180 (1), or 16-228-185, the department is electing, from among the enforcement mechanisms available to it for the enforcement of WAC 173-200-040 and 173-200-050 , to precede any civil or criminal penalty with a compliance order.

(9) When a distinction cannot be made among ground water, surface water, or sediments the applicable standard shall depend on which beneficial use is or could be adversely affected. If beneficial uses of more than one resource are affected, the most restrictive standard shall apply.

(10) The department shall give due consideration to the precision and accuracy of sampling and analytical methods used when determining compliance with this chapter.

(11) The analytical testing methods for determining compliance with this chapter shall be approved in writing by the department prior to the performance of analyses.

THE PROPOSED AGREED ORDER IS FUNDAMENTALLY FLAWED

The frame work, limited scope of study, and assumptions made in the proposed Agreed Order fatally prejudice and contaminate the results of the investigation and evade DOE nondiscretionary duty to enforce the State's groundwater law. The proposed Agreed Order threatens the public interest and poses a number of serious disadvantages for the community.

3 THE SCOPE OF THE GROUNDWATER STUDY IS TOO LIMITED AND EXCLUDES MOST OF THE AREA WHICH SHOULD BE INCLUDED IN THE STUDY, CONTAMINATING THE OUTCOME OF THE ANALYSIS

The proposed Agreed Order calls for a study of groundwater limited to a small area at Sea-Tac airport called the airport operations and maintenance area (AOMA). This area which is approximately 1 2 square mile in area comprises about 320 acres. The total area of Sea-Tac airport is approximately 3000 acres or about five (5) square miles. The agreement must be modified to include the entire airport site in the groundwater study. Additionally, areas where development is planned must be included in the groundwater study. In particular the Agreed Order must address the issue of groundwater impacts associated with the Port of Seattle's Master Plan Update including the proposed 3rd runway project.

The groundwater study area excludes the area immediately surrounding the Olympic Fuel facility. This area is the scene a numerous fuel spills.] 3

4[THE AGREED ORDER INAPPROPRIATELY PROPOSES USING THE MODEL TOXICS CONTROL ACT (MTCA) TO SHIELD THE PORT FROM COMPLIANCE WITH THE STATE'S GROUNDWATER LAW

While the proposed Agreed Order purports to study groundwater it is issued under the authority of RCW 70.105D (1). also known as the Model Toxics Control Act. (MTCA). The Agreed Order proposes to define the <u>entire</u> airport as a MTCA facility or hazardous waste site. The Order proposes to address ongoing releases to groundwater from fuel related and other operational facilities to be dealt with under MTCA. It is not appropriate to use MTCA this way and will result in the wrong standards being applied to ongoing releases of contaminants to groundwater at the airport.

The proposed Agreed Order ignores the stringent and comprehensive provisions of the Washington's groundwater law. It attempts to evade WAC 173-200 by inappropriately applying another law called the Model Toxics Control Act (MTCA) to the issue of groundwater quality. Ongoing releases from operational facilities to waters of the state in the case of groundwater specifically require a state Waste Discharge Permit. Ecology is proposing to limit the application of WAC 173-200 to the Industrial Waste Treatment System (IWS) lagoons at the airport, while ignoring ongoing releases from the fueling system. for example, which is part of the ongoing operation of the industrial facility. All these ongoing operations should be covered by a section in the Port of Seattle's NPDES permit which concerns discharges of contaminants into groundwater.

The practical effect of this scheme is to eliminate much of the protection which the groundwater law (WAC 173-200) is intended to provide. For example under the groundwater law. <u>all</u> groundwater is defined as waters of the state with most of the same requirements for reporting. permitting. studies and corrective action under WAC 173-200. Under the proposed Agreed Order. only the identified surface water and drinking water receptors sites are afforded any level of protection. The groundwater under the airport is written off by the Order as long as the study fails to show a likely impact to a receptor. Unless this occurs no further action including any other study is required. This in spite of data from airport consultants which show that the upper groundwater is contaminated and the lower acquifer which supplies the Highline and Seattle Water District's water supply are connected. As a result instead of anti-degradation safeguards and other standards in place to prevent harm to the groundwater. groundwater under Sea-Tac airport is essentially written off in this Order.

The proposed Order. if adopted. will be an unmitigated disaster for the communities surrounding the airport. The Order would require that groundwater at the airport would be monitored only at the "receptor" sites designated in the order as defined under MTCA. (See p.16 <u>Definitions</u>). The proposed Agreed Order also limits the number and locations of the designated receptors to those which prejudice the outcome of the proposed modeling study. In simple terms the "Agreed Order" permits the Port of Seattle to turn property inside the fence at Sea-Tac airport. including the underlying acquifer

supplying the Highline Water District, the Seattle Water District, Water District No. 54, etc.. into its own personal unregulated hazardous waste disposal site.

THE PROPOSED AGREED ORDER IGNORES THE RELATIONSHIP BETWEEN WAC 173-200 AND THE PORT'S EXISTING NPDES PERMIT. THE PROPOSED AGREED ORDER ALSO FAILS TO ALLOW THE INTEGRATION OF PROVISIONS OF THE STATE'S GROUNDWATER LAW INTO THE PORT'S FORTHCOMING NPDES PERMIT.

The Proposed Order is being issued prematurely and prior to the issuance of the Port's National Pollution Discharge Elimination System (NPDES) permit which is scheduled for renewal later this year. Discharges to groundwater in the renewed NPDES permit must be covered under WAC 173-200. The proposed Agreed Order contains no discussion of the relationship of the groundwater study to the renewal of the Port's waste discharge (NPDES) permit. Thus. in its present form the Order attempts to directly circumvent any effort to cover ongoing releases to groundwater from the airport. The order allows large volumes of groundwater to be written off with no further action or study. WAC 173-200 does not allow this approach to groundwater management.

While there is language under MTCA to allow Best Management Practices to supplant the need for a discharge permit in limited circumstances this is the wrong site to do so. It is clear that any industrial activities that involve discharges to groundwater must be covered by a State Waste Discharge Permit under WAC 173-200. While Best Management Practices should be carried out by POS and the airport tenants. it appears the only reason they are included in the order is to provide a basis to attempt to circumvent WAC 173-200.

It is also clear that the only Independent Cleanup Actions (like those done POS and its tenants at the airport) which are exempt from the State's groundwater law (WAC 173-200) are cleanup actions under taken by the Department of Ecology under an Agreed Order.] 4

THE PROPOSED ORDER MAKES ERRONEOUS, FALSE AND MISLEADING STATEMENTS

There are a number of self serving statements or assumptions in the proposed Agreed Order.5 [In spite of contrary information being supplied to Ecology the Order assumes that releases to groundwater have only occurred in the half square mile area called the aircraft Operations and Maintenance Area.] 5 [While the Order states cleanup at four of twelve sites is completed. there is no mention of the large quanta of fuel that has been abandoned on and in the groundwater.] 6 [While admitting unknown areas of contamination may exist in the AOMA the order determines a remedial investigation to find the contamination cannot be done. A number of reasons are given as to why it can not be done but most of the reasons are controverted Work including well drilling has already occurred in and outside of the AOMA area.] 7

THE PROPOSED ORDER CONTAINS FLAWED ASSUMPTIONS AND

FINDINGS

4 One of the primary purposes of the proposed Order is to confirm the assumption that groundwater flow from the AOMA flows to the west toward the interior of the airport. This way POS will not have to meet the MTCA method A cleanup levels for the groundwater or soils. In fact the language of the order eliminates any standards for cleanup of soil or groundwater, replacing it with a "you allow any level of pollution in the soil and groundwater as long as it is not proved to be discharging to one of the identified receptors." Ecology signs off on abandoning contaminated groundwater and soil at the airport in blatant disregard for community feelings on the subject. 4

7 The proposed Order arbitrarily finds that certain areas of the airport cannot be studied. The excuses given are (1) thick concrete would prohibit extensive drilling. (2) that this work could present a safety risk to aircraft operations and personnel, (3) that extensive drilling could spread contamination and (4) costs of investigating the area "would be expensive" are both specious and irresponsible. The findings ignore use of available technologies and practices which permit sampling of groundwater at such locations. Slant drilling to sample beneath the operational areas is feasible. The cost argument is similarly ludicrous. The point is not the cost but the fact that the Port has a legal obligation to conduct groundwater testing not only in the AOMA but throughout the entire site. DOE has a non-discretionary duty to require that the Port conduct this testing under State law. 7 We are tired of excuses! 9 How was the public involved in making the proposed Order's determination that this testing was not affordable? 9

3 THE PROPOSED AGREED ORDER COMPLETELY IGNORES THE RECOMMENDATIONS OF THE STATE SPONSORED SEA-TAC AIRPORT IMPACT MITIGATION STUDY CONCERNING GROUNDWATER IMPACTS AND MUST BE REISSUED TO INCLUDE THE RECOMMENDATIONS OF THIS STUDY

The proposed Agreed Order completely ignores the recommendations of the Sea-Tac International Airport Impact Mitigation Study issued February 1997 prepared under a grant form the State of Washington to local cities. We have enclosed a copy of Section 7.17 (Ground Water Quality and Hydrology - Acquifer Recharge Zone Impacts): Section 7.18 (Ground Water Quality and Hydrology - Acquifer Contamination Mitigation): and Section 7.19 (Additional Surface/Ground Water Mitigation Measures) which make specific recommendations related to groundwater monitoring. Steps have not been included to assure that the total recharge zone for the acquifer is protected (p.7-26) The proposed Agreed Order also completely ignores recommendations in the Impact Mitigation Study which address impacts associated with the removal of soft soils located above the acquifer or the importation of 26.4 million cubic yards of fill material associated with the construction of the proposed 3rd runway. The proposed Agreed Order similarly fails to address groundwater impacts associated with the proposed relocation of the headwaters of Miller Creek and Lake Reba Detention basin located on airport property as well as property located immediately to the West of Sea-Tac airport. The impact mitigation study identifies 12 neighborhoods in Burien. 10 neighborhoods in Des Moines. 9 neighborhoods in Normandy Park which will require a mitigation plan for impacts

associated with the reduction of the Highline Acquifer recharge zone. The proposed Order contains no discussion of these impacts. no discussion of how groundwater quality will be monitored to determine the extent of these impacts. no plan establishing an antidegradation study. no plan to apply criteria, evaluation, implementation or enforcement , no point of compliance in the affected areas.] 8

9 [THE AGREED ORDER MUST BE REWRITTEN AND REISSUED AFTER INCORPORATION OF COMMENTS FROM A PUBLIC PARTICIPATION PROCESS

We want a comprehensive public participation program which will involve members of the community and local cities before any agreement between the Port of Seattle and the Department of Ecology is adopted. The public has not been involved in discussions leading up to this proposal. We strongly recommend that DOE appoint a Citizen's Advisory Committee (CAC) to develop the scope of work for a comprehensive groundwater study. and that the CAC monitor. review. and evaluate the consultant's findings after the SOW has been established through a public participation process.. The CAC would be involved throughout the Phase I and Phase II stages of the investigation rather than at the end. This Ad Hoc committee would be an oversight body. consisting of private citizens. private and non-profit organizations. and local water districts. The CAC would meet prior to execution of the Agreed Order to frame the SOW in the Agreed Order. The CAC. in consultation with the study team will be responsible for the determination and identification of underground collection points. stream flows. acquifer connections. etc.] 9

10 [THE AGREED ORDER MUST BE REWRITTEN AND REISSUED AFTER ENFORCEMENT STEPS ARE DEFINES AND INCLUDED

The proposed Order fails to define the specific regulatory enforcement steps which will be taken by DOE to prohibit current and future pollution in the public and private drinking water supply wells and well as surface waters. including but not limited to. Bow Lake. Des Moines Creek. Miller Creek. Walker Creek. and the waters of Puget Sound] 10

11 [THE AGREED ORDER MUST BE REWRITTEN AND REISSUED TO INCLUDE A COMPREHENSIVE GROUNDWATER MONITORING PROGRAM THROUGHOUT THE ENTIRE AIRPORT FACILITY] 11

The provisions of the State groundwater law and the provisions of Washington Administrative Code Section 173-200 applied to groundwater throughout the entire airport facility. Groundwater located beneath the ground at Sea-Tac airport is the property of the State. The Port does not own or control this groundwater.

11 [The Department of Ecology must limit the scope of the application of the provisions of the Model Toxics Control Act (MTCA) to only those areas identified as disposal sites for hazardous materials.] [4 As proposed the Agreed Order presents a shield to the Port. and DOE. from the stringent and comprehensive requirements of the State's groundwater law.] 4

11 [The proposed Order admits that groundwater in the Qva acquifer is contaminated at least four sites (P.2). Nevertheless the proposed order proposes monitoring contaminant flow only of areas of the Qva acquifer located within the Airport Operations and Maintenance Area (AOMA). Contaminants throughout the entire extent of the Qva acquifer should be monitored in this study.] 11

12 [THE MODELING PROTOCOL DESCRIBED IN THE PROPOSED AGREED ORDER MUST BE REWRITTEN AND REISSUED

The modeling program contrived in the proposed Agreed Order restricts the boundaries of the testing to the limited area around the terminal facilities at the airport. Under the proposed Order the area of study is limited to "known and potential (based on historical operations) areas of soil and groundwater contamination within the AOMA and its near-vicinity (Defined as within approximately 1/4 mile of the AOMA)". (p.9) The restricted scope of the groundwater flow and contaminant fate and transport model prejudices the results of the study. The proposed Order's failure to allow testing throughout the area contaminates the results of the modeling program because the model will rely on inputs from selected sites using historical data

(a) reflects past rather than current conditions

(b) the modeling assumes that indications of groundwater flow toward the center of the airport facility will constitute evidence that there is no risk

(c) the Port and DOE without public involvement decide the locations of test wells and determination of modeling results.] 12

THE AGREED ORDER MUST BE REWRITTEN AND REISSUED TO INCORPORATE CITIZENS COMMENTS ON SPECIFIC SECTIONS OF THE PROPOSED AGREED ORDER

In addition to integrating the aforementioned items into a revised proposal we would like to add the following additional comments on specific sections in the proposed Agreed Order. Please make the following changes and provide additional information as requested in the revised Order.

Section II. Findings of Fact

Item 2.

13
(a) [Clarify the apparent confusion between the voluntary nature of the legal agreement (Agreed Order) with the Port of Seattle (POS) and the mandatory requirements of the Model Toxics Control Act (MTCA) per RCW Chapter 70.105D.] [The proposed Order should contain an explanation of how the subject matter of the proposed Agreed Order relates to Washington State's hazardous waste cleanup law (MTCA) and Washington State's Groundwater Law] 14

(b) The discussion notes that twelve separate areas (sites) located within the Airport Operations and Maintenance Area (AOMA) have been subjected to the release of hazardous substances. [15 The section should discuss groundwater monitoring outside the AOMA and include all other airport areas.] 15

[16 (c) The proposed Agreed Order provides no basis for its determination that the primary contaminant of groundwater is jet fuel.] 16

[17 (c) The proposed Agreed Order states that "it is not practical to conduct a remedial investigation of the entire AOMA in order to identify unknown contaminated areas because: (1) the extensive drilling required would be very difficult given taxiing aircraft, thick concrete in most areas, and the large number of underground utilities. (2) such extensive work over time would represent a significant safety risk to aircraft operations and personnel. (3) extensive drilling could potentially spread contamination, and (4) costs of investigating the 1.2 sq. mile area of the AOMA would be prohibitive." Provide an analysis which clearly develops the costs of implementing a remedial investigation program in the AOMA. Provide sampling costs, and include consideration of overtime costs associated with sampling during non-peak operations. Include analysis of the costs of "slant drilling" of areas within the AOMA which are located under concrete.] 17

Item 3

[18 (a) Remove the statement that "STIA area perched groundwater is not a public or private drinking water resource based on current information."] 18

[19 (b) Provide the basis for the statement that "[t]he Qva Aquifer is not used as a public drinking water supply resource in the general area of STIA."] 19

Item 4. [20 Remove the language which states that the area located outside the AOMA is not appropriate for

(a) determining whether or not that the Qva aquifer has been significantly impacted by airport operations within the entire airport site during the last 50 years.

(b) determining the predominant flow direction of the Qva aquifer relative to the airport site.] 20

[21 (c) explain why restricting the scope of the groundwater study to the 1.2 sq. mile area designated the AOMA will identify the potential risk posed by contamination of groundwater located throughout the airport site, specifically contamination which affects public drinking water supply wells, including the City of Seattle's Water District, the Highline Water district, and Water District No. 54] 21

[22 (d) Explain how limiting the scope of this groundwater study to the AOMA area could provide a basis for a "consistent approach to cleanup actions within the AOMA."] 22

23 [Item 5. The statement the "primary cause of soil and groundwater contamination at STIA has been leakage from underground storage tanks (USTs) and associated underground piping." prejudices the results of the study contemplated in the proposed Agreed Order. Remove the statement.] 23

Item IV. Work to be Performed

24 [Item 1(c) Explain why the database proposed of wells located in areas "across the surface of the Qva acquifer throughout the AOMA and its near vicinity" will not contain historical data indicating the date that the data was collected and an analysis of how the results of the collected data could be affected by hydraulic flow through local groundwater since the time the sampling was conducted. Also explain how the lack of chemistry analysis of the historically sampled sites affects the reliability of the analysis.] 24

25 [Item 2. Explain the rationale for the proposed Agreed Order's determination that "[w]ells outside the AOMA will be limited to existing wells that are reasonably accessible and in usable condition."] 25

26 [Item 2. Explain how the Port of Seattle and Ecology can determine, without the benefit of public input that "additional hydrogeological data are necessary to complete the modeling".] 26

27 [Item 3. Explain why it is reasonable that a a groundwater flow and contaminant fate and transport model can be developed utilizing data restricted to the AOMA to develop a comprehensive model of groundwater for the receptor sites.

Item 4. Explain how a comprehensive analysis of groundwater can be obtained if the Port and DOE stipulate in this ORDER that the results of the initial AOMA study will guide the scope of work for additional investigation activities.] 27

28 [Item 5. Explain how the issuance of a report compiling the evaluating data from the AOMA will be coordinated with the reporting requirements of the NPDES permit.] 28

29 [Item 6. Explain how the Port and Ecology will assess the fuel storage and distribution systems at STIA through this proposed ORDER. Explain in detail the groundwater monitoring which will be required through this ORDER to provide protection of groundwater in the vicinity of the STIA fuel storage and distribution system. This discussion should include the Olympic tack farm. the hydrant fueling system. Specific discussion should be included which addresses the issue of the reliability of leak detection systems for fuel distribution systems, implementation of groundwater monitoring wells at sites under fuel distribution tanks and hydrant piping systems.] 29

30 [Provide the definition of "technically and economically reasonable leak detection and prevention methods".] 30

31 [Provide UST records for all abandoned UST's during residential buyout.] 31

V. Terms and Conditions of Order

Item 1. [DEFINITIONS inappropriately defines provisions of the Model Toxics and Control Act for use in the proposed Agreed Order. Change Item 1 Definitions to note that definitions established by the State's groundwater laws (ch. 90.48 RCW, 91.54 RCW and ch. 173-200 WAC) shall control the meanings of the terms used in this Order.] 32

Item 5. [Add requirement that the study should be undertaken by a registered professional, who is a professional registered engineer, or a registered industrial hygienist registered with the State of Washington.] 33

Item 12. [Remove language which states "Ecology shall assume that the status quo remains in effect (i.e. the Port is considered the local government land-use permitting agency for purposes of this Order.)" (p.24) This language prejudices the pendant land-use jurisdictional litigation between local cities and the Port of Seattle.] 34

VII. Enforcement.

Item D. [Remove language which states "This Order is not appealable to the Washington Pollution Control Hearings Board. This Order may be reviewed only as provided under Section 6 of Ch. 70.105D RCW."] (p.27) 35

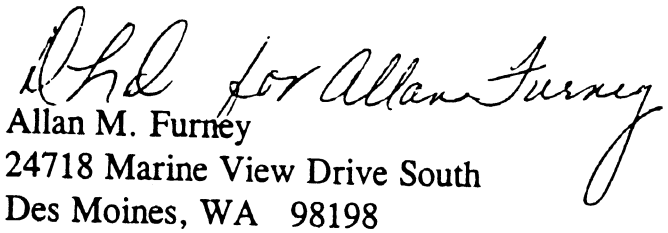
[Explain the relationship between the proposed Agreed Order the forthcoming National Pollution Discharge Elimination System (NPDES) Permit.] 28

[The proposed order should explain the propriety of the circumstance under which the proposal was developed: through consultations with DOE personnel paid directly by the Port of Seattle. During this time agreed order under MTCA was in place.] 36

CONCLUSION

The May 1997 edition of the Port's publication *Forum* mailed to South King County residents contained an article concerning the issuance of this proposed Agreed Order. [The article quotes an unnamed Department of Ecology official stating "Much is already known about the groundwater and the contamination beneath the Airport operations and maintenance area". We have no such understanding that this is the case.] [The article also states that the groundwater study associated with this proposal will provide "a 'big picture' review of groundwater conditions." Our review of the facts and regulations concerning the proposed Agreed Order persuade us that this assumption is flawed.] 38

We strongly urge DOE to take all necessary steps to completely revise this proposed Order. We believe that DOE's implementation of the proposed Order in its present form will have pernicious effects upon citizens in our community, will reflect badly upon DOE, and may likely lead to a legal challenge of its provisions before the pollution control hearings board. As you are certainly aware public sentiment at the hearing was overwhelmingly opposed to the conditions contained in the current proposal. Finally, we cannot over emphasize our frustration at being excluded from public participation and



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Response to comments by Allan M. Furney on behalf of the Regional Council on Airport Affairs (RCAA)
Comments were presented orally at the May 21, 1997 Public Meeting and in a letter dated June 11, 1997

Comment #1:
A "BACKGROUND" section presents the RCAA's interpretation of the purpose, consequences, and workings of the Agreed Order.

Response #1:
The following inaccurate information was presented in the BACKGROUND section:

(1) The statement that a purpose of the Agreed Order is to "determine groundwater contamination migration potential in the Southeast quadrant of the airport" is incorrect. The Agreed Order will determine groundwater contamination originating from the Southeast quadrant of the airport wherever the contamination could be transported via groundwater flow. The potential receptors identified in the Agreed Order are not located within the Southeast quadrant of the airport.

(2) The statement that a purpose of the Agreed Order is to "implement pollution prevention or best management practices (BMPs) to reduce ongoing releases from the airport and its tenants in a limited area of the airport" is incorrect. Pollution prevention and BMPs regarding underground storage tank systems will be implemented airport wide.

(3) The statement "If the model shows polluted groundwater would stay within the airport area and not reach sensitive receptors, no other work would be required of POS" is incorrect. The preferred outcome of the model would be to show polluted groundwater would stay within the airport area, since no one certainly prefers that sensitive receptors are or will be impacted by polluted groundwater. Modeling alone is not sufficient however to demonstrate the behavior of polluted groundwater, and as per the Agreed Order, the POS must do work to follow up the modeling with drilling and data acquisition. Furthermore, the results of the model do not negate cleanup requirements under the Model Toxics Control Act (MTCA). The risk presented by the polluted groundwater is an element that can be considered when determining appropriate remedial actions however.

(4) The statement regarding follow-up actions to the modeling "which would require sampling of wells for a limited number of organic and inorganic pollutants" is incorrect. No sampling scenario was proposed in the Agreed Order and there is no basis for the statement. Chemical data acquisition following the modeling will include the pollutants that are typical of airport operations and will be presented in the addendum to the Agreed Order when it is open to public comment.

(5) The statement "If the additional study shows that pollution is leaving the site or is impacting the identified receptors, corrective action could be required is incorrect. If pollution is leaving the airport or impacting receptors, corrective action under the MTCA would be required.

Comment #2:
A section entitled "WASHINGTON STATE'S GROUNDWATER LAW" presents an extensive dissertation that is RCAA's interpretations of WAC 173-200. A comment within this section specific to the Agreed Order states that the point of compliance in the Agreed Order should be established under WAC 173-200 that includes an evaluation program with public input, rather than established under the Model Toxics Control Act (WAC 173-340).

Response #2:
The Agreed Order involves a cleanup action under WAC 173-340 and a general response to the dissertation presented on WAC 173-200 would be outside the scope of this Responsiveness Summary. In response to the specific comment, once contamination has occurred that exceeds cleanup standards, then the cleanup regulation, MTCA, applies and points of compliance for cleanup actions are established under the cleanup process. However, no point of compliance is mentioned in the Agreed Order, and no point of compliance will be established under the Agreed Order.

Comment #3:
The scope of the groundwater study is too limited in that it is confined to a small area at Sea-Tac Airport called the AOMA and excludes most of the area, which should be included in the study. The Agreed Order must be modified to include the entire airport, all areas where development is planned, include groundwater impacts from the Third Runway Project, and include the area immediately surrounding the Olympic fuel facility.

Response #3:
Response to this comment is provided in Part 1 of the Responsiveness Summary.

The groundwater study will be "confined" to a large area that encompasses the entire airport and additional surrounding area including the locations of receptors. Facilities capable of releasing contaminants in sufficient amounts over time to impact the Qva aquifer are and have been located within the AOMA of the airport and not generally throughout the entire airport. The known impacts to the Qva aquifer are within the AOMA. The groundwater study will evaluate risk possibly posed by contamination in the Qva aquifer beneath the AOMA to the receptors identified in the Agreed Order, which are outside the AOMA. The Agreed Order is a remedial action under the MTCA and will not deal with potential hydrological impacts to groundwater from developmental activities at Sea-Tac Airport, although the groundwater flow model constructed under the Agreed Order possibly may be useful in that regard. The Olympic fuel facility will be included in the groundwater study.

Comment #4:
Conducting this Agreed Order under the authority of the Model Toxic Control Act is a scheme to shield the Port of Seattle from compliance with the State's groundwater law. The Agreed Order will define the entire airport as a MTCA hazardous waste site and proposes to address ongoing releases to groundwater from facilities at the airport under the MTCA. Ongoing releases to groundwater from facilities at Sea-Tac Airport must instead be covered under WAC 173-200 via a Waste Discharge Permit. Additionally the Independent cleanups being done by the Port and tenants at the airport are not exempt from the provisions of the State's groundwater law (WAC 173-200) as are cleanups done formally under Ecology's direct oversight.

The consequence of the Agreed Order is that it would permit the entire airport including the groundwater beneath that supplies public water wells to become an unregulated hazardous waste disposal site. Groundwater would only be monitored at the receptor sites, and cleanup actions would be eliminated if there were no risk to receptors.

Response #4:
The previous comment (Comment #3) objected that the actions proposed in the Agreed Order would not address the entire airport, while this comment appears to object that the Agreed Order will address the entire airport.

Response to this comment is provided in Part 1 of the Responsiveness Summary.

The comment implies that there are large ongoing releases of hazardous substances to groundwater from operational facilities at Sea-Tac Airport. At this time, there are no known identifiable ongoing releases to groundwater from facilities at the airport. The current soil and groundwater contamination at Sea-Tac Airport was caused by releases during operations in past years.

The comment implies that release of concentrated hazardous substances such as pure product from facilities is acceptable (permitted by a State Waste Discharge permit) as long as the release does not impact groundwater according to criteria in WAC 173-200. Ecology believes that no release of hazardous substances such as pure product from facilities to the environment is acceptable. For example, the Underground Storage Tank regulations (WAC 173-360) mandate zero release from underground tank systems regardless of the potential of the release to impact groundwater.

Cleanup actions done under the MTCA are all exempt from the provisions of WAC 173-200 whether or not the cleanup actions are done independently or done with Ecology's oversight.

The comment states that the Agreed Order requires that groundwater at the airport would only be monitored at the "receptor sites" designated in the Order. Groundwater monitoring will continue at the known MTCA sites and at other appropriate locations as may be indicated by the results of the groundwater study. It would not be appropriate to monitor "at" the receptor sites but rather upgradient from them to preclude possible

contaminants from reaching the receptors. There is no language in the Agreed Order that states monitoring would only be conducted "at" the receptors.

The comment states that the Agreed Order limits the number and locations of the designated receptors to those that prejudice the outcome of the study. The Agreed Order covers public and private drinking water wells, surface water bodies near the airport, and the aquifers that provide the mechanism for contaminant transport. It is unclear what other receptors there are that should be included in the Order so that the outcome of the study would not be prejudiced.

Comment #5:
In spite of contrary information being supplied to Ecology, the Order assumes that releases to groundwater have only occurred in the half square mile area called the Aircraft Operations and Maintenance Area.

Response #5:
Part 1 of the Responsiveness Summary provides response to this comment.

Ecology has been provided with voluminous information required by the Model Toxic Control Act which documents numerous environmental investigations at Sea-Tac Airport, and which documents that releases to groundwater have occurred in the Aircraft Operations and Maintenance Area. Ecology has received no information that indicates locations of releases to groundwater on Port-owned property outside the AOMA. As maps of the airport clearly show, the major facilities whose operations involve the storage and use of hazardous substances are located within the AOMA. In response to public comment alleging the existence of contaminated sites that have impacted groundwater on Port property outside the AOMA, this issue will be examined as part of the research of information called for in the Agreed Order.

Comment #6:
The Order states cleanup at four of twelve sites is completed, but there is no mention of the large quantities of fuel that has been abandoned on and in the groundwater.

Response #6:
The Agreed Order stated that cleanup actions had been completed at four former MTCA sites within the AOMA. Cleanup actions have not been completed at the twelve sites identified in the draft Agreed Order. Appendix 1 of the Agreed Order designated the MTCA sites where there is known contamination in the Qva aquifer. The results of the Agreed Order could indicate other potential areas of contamination in the Qva aquifer. At this time environmental investigations have been completed at many of the facilities that handled fuel products at the airport and other investigations will address remaining or former facilities either as a result of this Agreed Order, or as per WAC 173-360. Fuel that has contaminated groundwater is related to a particular facility, and there are not large quantities of fuel in/on groundwater that have been, or will be abandoned.

Comment #7:
The Agreed Order arbitrarily determines that certain areas of the airport cannot be studied and that a remedial investigation to find all contamination cannot be done. Reasons given such as drilling difficulties, safety risks to aircraft operations, risks of spreading contamination, and prohibitive costs are specious, irresponsible, and ludicrous. Drilling has already been accomplished at the airport, and technologies such as "slant drilling" would enable groundwater to be sampled at all locations. The Department of Ecology has a non-discretionary duty to require the Port to conduct groundwater testing, not only in the AOMA but also throughout the entire airport regardless of costs.

Response #7:
Response to this comment is provided in the Part 1 of the Responsiveness Summary.

The Agreed Order does not state that a remedial investigation to find unknown contamination cannot be done. The Agreed Order states that a remedial investigation is not "practicable" (as per definition in WAC 173-340-200) given reasons of drilling difficulties, safety risks, environmental risks, and prohibitive costs. These reasons are not sufficient to preclude drilling at the airport on a facility-specific scale such as has already been done extensively at the MTCA sites and in other environmental investigations conducted under WAC 173-360. These reasons are significant however, when considering a ubiquitous deep drilling program throughout an area the scale of the AOMA and in particular, throughout the entire airport as the comment demands. Slant drilling is not a panacea for addressing drilling problems on this scale. Ecology considers that an interim approach such as the groundwater study in lieu of a massive drilling program is appropriate to initially address the issue of risk possibly posed by groundwater contamination at the airport.

Ecology recognized that language in this section of the Agreed Order was misleading however, in the sense that (1) it conveyed that Ecology believes that a remedial investigation of the AOMA would never be practicable, and (2) that remedial actions can be precluded simply because of high cost. Changes were made to language in the final Agreed Order to correct these misconceptions.

It is Ecology's non-discretionary duty to monitor cleanup actions and insure that contamination at Sea-Tac Airport does not impact human health and the environment. It is Ecology's decision as to how that duty will be performed.

Comment #8:
The Agreed Order ignores the recommendations of the State-sponsored Sea-Tac Airport Impact Mitigation study concerning groundwater impacts and must be reissued to include the recommendations of this study. Specific recommendations of the mitigation study regarding potential impacts of the Third Runway that the Agreed Order should address are enumerated.

Response #8:
Response to this comment is provided in Part 1 of the Responsiveness Summary.

Stating that this study was "State-sponsored" seems to imply that the State was responsible for the study, which is incorrect. The Legislature provided grant dollars for this study to be conducted and state personnel participated on the technical advisory committee and provided comments on the draft document as did many others. The City of Burien administered the grant and was responsible for the mitigation study.

The Agreed Order is a remedial action being done under the authority of the Model Toxics Control Act to address risk issues of groundwater that contains contaminants above cleanup standards. There is no authority under the MTCA to include non-contaminant issues such as potential hydrological impacts to groundwater from construction of the Third Runway or other developmental activities at Sea-Tac Airport under the Agreed Order. These issues are more appropriately addressed under other processes such as the 401/404 permit process, and the Agreed Order will not be reissued to include the identified recommendations of the mitigation study.

Comment #9:
The Agreed Order must be rewritten and reissued after incorporation of comments from a public participation process acceptable to the RCAA. This process must entail the appointment of a Citizen's Advisory Committee (CAC) that includes private citizens, private and non-profit organizations, and local water districts. The CAC would exercise ongoing oversight of the Agreed Order.

Response #9:
Response to this comment is provided in Part 1 of the Responsiveness Summary.

Ecology cannot subrogate its regulatory authority and oversight of this or any other Agreed Order to any outside group.

Comment #10:
The Agreed Order must be rewritten and reissued after specific regulatory enforcement steps are defined that will be taken by Ecology to prohibit current and future pollution in the public and private drinking water supply wells as well as surface waters near Sea-Tac Airport.

Response #10:
There is no known current pollution from the airport in public and private drinking water supply wells as the comment states, and it is incorrect to assume at this point that there will be future pollution in these wells unless specific actions are taken to prevent it.

The Agreed Order is a project to address already-existing contamination as per the MTCA. It is beyond the scope of the Agreed Order to encompass all state and federal regulations and all best management practices that could apply to operations of all facilities at the airport to prevent the release of all hazardous substances to groundwater

and surface waters. The Agreed order contains a pollution prevention component pertaining to the prevention of releases from underground storage tank (UST) systems under the authority of WAC 173-360 (the UST regulations). If violations of these regulations are noted and are not corrected in a timely manner, enforcement steps could be taken. In general, enforcement steps taken by the agency are on a situation-specific basis and cannot be specified in advance. Enforcement steps pertinent to this Agreed Order will not be specified making the assumption in advance that enforcement will be necessary.

Comment #11:
The Agreed Order must be rewritten and reissued to include a comprehensive groundwater monitoring program throughout the entire airport facility as per WAC 173-200 while the provisions of the MTCA (WAC 173-340) must be limited only to those areas identified as disposal sites for hazardous materials. The Agreed Order proposes monitoring contaminant flow only in areas of the Qva aquifer located within the Airport Operations and Maintenance Area, but should monitor contaminants throughout the entire extent of the Qva aquifer.

Response #11:
The comment refers to the MTCA sites at Sea-Tac Airport as "areas identified as disposal sites for hazardous materials". This language appears to imply that contamination in the MTCA sites resulted from purposeful acts to get rid (dispose) of hazardous material. Contamination in the MTCA sites resulted from accidental releases of hazardous materials of economic value (such as fuels) that no one would want to "dispose" of.

The comment states that the entire Qva aquifer at the airport is contaminated. Contamination in the Qva aquifer is related to facilities that released hazardous substances in sufficient quantities over time to have impacted the Qva aquifer, and those facilities don't exist throughout the entire airport. There are no data or rationale for stating that the entire Qva aquifer at the airport is contaminated and should be monitored everywhere.

The comment states that the Agreed Order proposes monitoring contaminant flow only in areas of the Qva aquifer located within the Airport Operations and Maintenance Area (AOMA). A previous comment (Comment #4) stated that the Agreed Order requires groundwater monitoring only at receptor locations (which are located outside the AOMA). Other than "downgradient from the AOMA" the Agreed Order does not specify groundwater-monitoring locations at all, but locations will be specified in the addendum that describes Phase II of the Agreed Order. It makes no sense to include a groundwater-monitoring program in the Agreed Order prior to conducting the modeling, which will indicate possible additional areas where the Qva aquifer should be monitored. These areas could be inside or outside the AOMA depending on where groundwater flow could transport the contamination over time.

Comment #12:
The modeling protocol described in the Agreed Order must be rewritten and reissued for the following reasons: (1) The limited area and restricted scope of the model prejudices the results of the study. (2) The model will rely on inputs from selected sites using historical data. (3) The model reflects past rather than current conditions. (4) The model assumes groundwater flow toward the center of the airport is evidence of no risk. (5) The Port and Ecology decide the locations of test wells and determination of modeling results without public involvement.

Response #12:
The area and scope of the model are not limited and restricted. The groundwater flow model will include a large area, which will enable the transport of contamination in groundwater originating from within the AOMA to be evaluated wherever it goes. The behavior of contaminants in the hydrogeological environment of Sea-Tac Airport in general will be better understood. The groundwater flow model will be constructed using geological data from many existing well and boring logs. The geology data remains constant (there has not been past and current geology during the existence of the airport). Several years' data that document the behavior of contaminants in groundwater over time are available at many MTCA sites and will be utilized in the contaminant transport modeling. An essential feature of modeling technology is the ability to simulate the behavior of groundwater and contaminant transport over time to represent past, current, and future conditions.

The model is computational and makes no prior assumptions regarding groundwater flow directions or implications of risk. Ecology and the Port will decide the locations of test wells and determination of modeling results and these decisions will be presented in the Phase I report, which is then open for public comment. The public comment process is the mechanism for public participation in these decisions

NOTE:
The following comments request changes to specific sections of the Agreed Order. Many of the requested changes are to include extensive explanations, discussions, analyses, and information as part of the document describing the Agreed Order. The document describing the Agreed Order is a formal legal document, and the format of the document is prescribed by the Attorney Generals' Office. The document is intended to describe in succinct language the particular situation of contamination, Ecology's formal determinations regarding, and the remedial actions to be performed. As a formal document, the Agreed Order is not a platform for extensive explanations, discussions, analyses, and relating voluminous information and these will not be added to the Agreed Order document as requested, but rather will be addressed as appropriate in the Responsiveness Summary.

Comment #13:
Confusion between the voluntary nature of this Agreed Order and the mandatory requirements of the Model Toxics Control Act must be clarified.

Response #13:
The Model Toxics Control Act (MTCA) mandates the general requirements regarding the cleanup process that apply to potentially liable persons (PLPs) that must take cleanup actions because contaminants have been released to the environment. The MTCA does not mandate the nature of Ecology's involvement in the cleanup actions that are being conducted by PLPs except that newly discovered contamination and cleanup actions must be reported to the agency, and Ecology must make an initial determination of the risk posed by newly discovered contamination. Under the MTCA, a PLP has the option to conduct cleanup actions independently without Ecology's direct involvement and oversight, but the mandatory requirements of the MTCA for cleanup must still be met.

Ecology does not have the resources to be directly involved and exercise oversight of all cleanup actions. Most cleanup actions (90%) take place independently and Ecology's role in these actions is in terms of reviewing and preserving documentation, database tracking, and rendering technical / regulatory assistance. It is Ecology's prerogative to select which sites and cleanup actions to be directly involved in. When Ecology exercises oversight and is directly involved in the cleanup actions of a PLP, a legal arrangement (Agreed Order or Consent Decree) is formalized with the PLP that specifies the cleanup actions that must be taken. The actions specified in these legal arrangements are not voluntary. Ecology can impose an Agreed Order or Consent Decree upon a PLP or conversely as per the MTCA, a PLP can request to do cleanup actions under an Agreed Order or Consent Decree. In the latter circumstance, the Agreed Order or Consent Decree could be considered as "voluntary". The decision to do the STIA groundwater study under an Agreed Order was a mutual decision by Ecology and the Port of Seattle.

Comment #14:
The Agreed Order should contain an explanation of how its subject matter relates to Washington State's hazardous waste Cleanup law (MTCA) and Washington State's Groundwater law.

Response #14:
Response to this comment is provided in Part 1 of the Responsiveness Summary.

As described in the Agreed Order, the Qva aquifer is known to contain contaminants at concentrations above the groundwater criteria as per the Groundwater law and/or above Method A and B cleanup standards as per the Cleanup law (MTCA). Thus cleanup actions regarding the Qva aquifer that can only be done under the authority of the Cleanup law are required. The Agreed Order is an investigative cleanup action concerning the contamination in groundwater at Sea-Tac Airport. The Groundwater law applies before contamination has occurred; the Cleanup law applies after contamination has occurred.

Comment #15:
The section of the Agreed Order describing the MTCA sites at the airport should discuss groundwater monitoring outside the AOMA and include all other airport areas.

Response #15:
The purpose of that section of the Agreed Order is to describe the situation regarding contamination in groundwater at the airport that is addressed by the Agreed Order. There is no known contamination in groundwater and no monitoring outside the AOMA and "all other airport areas" to discuss and include in this section. The results of the groundwater study could indicate locations outside the AOMA where additional groundwater monitoring is warranted, but any such locations are unknown at this time and cannot be discussed before the results of the study are known.

Comment #16:
The Agreed Order provides no basis for its determination that the primary contaminant of groundwater is jet fuel.

Response #16:
The Agreed Order states that the most abundant contaminant at the airport is jet fuel. Voluminous cleanup reports from the airport that have been provided to Ecology as required by the MTCA clearly indicate that the most abundant contaminant is jet fuel. Furthermore, of all the facilities that handle hazardous substances at the airport, the facilities that handle jet fuel are by far the largest and most abundant.

Comment #17:
An analysis, which develops the costs of implementing a remedial investigation program in the AOMA, should be provided in the section of the Agreed Order that indicates a remedial investigation throughout the AOMA is not practical for various reasons including prohibitive costs. This analysis should include sampling costs, overtime costs associated with sampling during non-peak operations, and costs of "slant drilling of areas that are located under concrete within the AOMA.

Response #17:
The draft Agreed Order does not state that it is not "practical" to conduct a remedial investigation of the AOMA, the draft Agreed Order states that it is not "practicable" to conduct a remedial investigation. The words have different meanings. The word "practicable" is defined in WAC 173-340-200.

The draft Agreed Order stated that costs of investigating the 1/2 square mile area of the AOMA would be prohibitive, and it is reasonable to ask what those prohibitive costs would be. However, putting together a cost analysis for a complete remedial investigation (RI) of the entire AOMA would be a significant project and beyond the scope of this Responsiveness Summary. It is evident without computing an exact figure however that the cost of a complete RI throughout the entire AOMA would be very high and disproportionate to the environmental benefit derived as it now appears.

The purpose of a complete RI of the AOMA would be to discover and characterize all soil and groundwater contamination throughout the 1/2 square mile area. The known contamination is generally associated with specific facilities, but unknown contamination could also exist. A complete RI would essentially entail drilling hundreds of holes

through a maze of utilities at least to the Qva aquifer (70 – 90ft.deep) throughout the AOMA. Drilling at the airport requires two drill rigs, one to core through the thick concrete and one to accomplish the drilling and sampling beneath. The concrete core holes must be fitted with special plates to enable aircraft to run over them, and then the holes must ultimately be reconstructed. Drilling work must completely revolve around aircraft operations, and can only be accomplished during limited "non-peak" times, often at night.

The AOMA is mostly covered by thick concrete. Drilling around the edges of the concrete by "slant drilling" to acquire subsurface data throughout the AOMA would likely be more cumbersome and expensive than the conventional method of drilling using two drill rigs.

Ecology did not mean to imply however that remedial actions including a RI are precluded in the AOMA or anywhere else if the actions are required to prevent exposure to contaminants just because the actions would "cost too much". Language in the final Agreed Order was changed to express the concept that the costs of doing a RI of the entire AOMA, considering the environmental benefit that would be derived, did not appear to be warranted at this time.

Comment #18:
The statement in the Agreed Order that "STIA area perched groundwater is not a public or private drinking water resource based on current information" must be removed.

Response #18:
Perched groundwater at the airport is generally in the form of small, discontinuous zones, which are most often seasonal and are unsuitable for public or private drinking water wells. The statement in the Order is accurate and the comment provides no rationale as to why the statement must be removed. The statement will not be removed.

Comment #19:
The basis for the statement that "the Qva aquifer is not used as a public drinking water supply resource in the general area of STIA must be provided.

Response #19:
Hydrological testing of the Qva aquifer has indicated that the "yield" of the Qva aquifer is insufficient to support the operations of public water wells. The "yield" of an aquifer is how much and how fast water can be pumped out. The public water wells in the area of STIA are well known and are identified in the Agreed Order. Well log information from these public water wells indicates there are no wells that pump from the Qva aquifer. It is doubtful there are other public water wells in the area of STIA that no one knows about that could be pumping from the Qva aquifer.

Comment #20:
Language in the Agreed Order must be removed which states the area located outside the AOMA is not appropriate for (a) determining whether or not the Qva aquifer has been

significantly impacted by airport operations within the entire airport site during the last 50 years, and (b) determining the predominant flow direction of the Qva aquifer relative to the airport.

Response #20:
There is no language in the Agreed Order that states specifically what the comment states that the Order states. Facilities at Sea-Tac Airport that utilize hazardous substances in support of aircraft operations are currently and have been historically located in the AOMA area of the airport. In response to public comment alleging widespread contamination outside the AOMA, research will be done of historical operations to identify any potentially significant contaminant sources within the operating airport outside the AOMA which could pose risk to the receptors through groundwater flow.

The flow directions of the Qva aquifer and all other aquifers included in the model will not be determined by groundwater elevation data just from within the AOMA. The groundwater model will utilize data from a large area that encompasses the airport and locations of the receptors identified in the Agreed Order.

Comment #21:
An explanation is needed as to why restricting the scope of the groundwater study to the 1/2 square mile AOMA of the airport will identify the potential risk posed by contamination of groundwater located throughout the airport site, specifically contamination which affects public drinking water supply wells, including the City of Seattle's Water District, the Highline Water District, and Water District No. 54.

Response #21:
The comment states that all groundwater is contaminated throughout the entire airport. There are no data or rationale that would support that statement.

The comment states that there is contamination at Sea-Tac Airport which affects the public drinking water wells in the City of Seattle's Water District, Highline Water District, and Water District No. 54. This is a serious allegation that implies these public drinking water sources are or could be already contaminated.

RCAA must immediately provide any specific knowledge, rationale, and proof, of this allegation to the three water districts, the State Department of Health, Seattle King County Department of Health, and the Department of Ecology.

There is no indication at this time that any known contamination Ecology is aware of at Sea-Tac Airport is currently impacting these public water wells. If RCAA has no proof these public water wells are or could be already contaminated; it is a completely reckless and irresponsible allegation to make.

As has been stated many times in this Responsiveness Summary, the known contamination of the Qva aquifer and the sources capable of releasing sufficient quantities of hazardous substances over time to impact the Qva aquifer are located within

the AOMA of the airport. The STIA groundwater study will evaluate the transport of contaminants in groundwater originating within the AOMA wherever that transport may go, including if it goes into the capture zones of the public water wells.

Comment #22:
An explanation is needed as to how limiting the scope of this groundwater study to the AOMA area could provide a basis for a "consistent approach to cleanup actions within the AOMA".

Response #22:
The groundwater flow model is not limited to the AOMA and will extend over a significantly larger area. The STIA groundwater study will provide more detailed and comprehensive information about hydrogeologic conditions, how groundwater flows in the aquifers beneath and surrounding Sea-Tac Airport, and also how contaminants are transported in those aquifers and risk posed by those contaminants. The known areas of contamination at the airport are separate, individual sites with localized environmental information at each site. The groundwater study will provide comprehensive information on a much larger scale that encompasses the individual sites, and this information could apply similarly to the ongoing and any future cleanup actions at these individual sites.

Comment #23:
The statement in the Agreed Order that "the primary cause of soil and groundwater contamination at STIA has been leakage from underground storage tanks (USTs) and associated underground piping" must be removed because it prejudices the results of the study.

Response #23:
The largest facilities that utilize hazardous substances at Sea-Tac Airport are obviously the underground jet fuel storage and transfer facilities. Millions of gallons of jet fuel pass through these systems and the most abundant contaminant is jet fuel. The other known contaminants are gasoline, industrial solvents, mineral spirits, lubricating oil and aircraft deicing fluids, most of which have typically been stored in and accidentally released from USTs and associated piping. Voluminous environmental information in reports that document cleanup activities at the airport indicates that most groundwater contamination is associated with UST systems. The statement is factual information and factual information doesn't prejudice the study. The statement will not be removed.

Comment #24:
An explanation is needed as to why the database proposed of wells located in areas "across the surface of the Qva aquifer throughout the AOMA and its near vicinity" will not contain historical data indicating the date that the data was collected, and also an analysis of how the results of the collected data could be affected by hydraulic flow through local groundwater since the time the sampling was conducted. An explanation of how the lack of chemistry analysis of the historically sampled sites affects the reliability of the analysis is also needed.

Response #24:
The comment is not entirely clear, but it is interpreted to be expressing concerns about a perceived lacking in the Agreed Order that historical chemical data regarding contaminants appears not to be analyzed or considered in the historical database that is to be created.

The Agreed Order clearly states that part of the information included in the database of wells created from research of historical material is "ground water quality data", which would include chemical data regarding contaminants. The Agreed Order further states that this database of wells will be used in the development of groundwater flow and contaminant fate and transport models. Hydrogeological data from the wells will be utilized in the groundwater flow model and contaminant chemical data will be utilized in the contaminant fate and transport model.

A small number of the total wells in this database are actually in areas of contamination and include chemical contaminant information. These wells are located at the various individual MTCA sites within the AOMA. Chemical data in groundwater from multiple sampling events over the course of years is available from the wells at many of these sites, but the chemical data from each well is only relevant to the individual MTCA site where that well is located. The groundwater chemical data in the database from wells at one MTCA site mostly can't be related to data from wells at the other MTCA sites.

The historical chemical data for contaminants will be utilized in various ways in the contaminant fate and transport modeling such as deriving indicator chemicals and the chemicals of concern. The manner in which the historical contaminant chemical data will be analyzed and utilized in the contaminant fate and transport modeling along with the data itself as applicable to the Qva aquifer will be presented in the Phase I report, which will be open to public comment.

Comment #25:
An explanation is needed of the rationale for the statement in the Agreed Order that "wells outside the AOMA will be limited to existing wells that are reasonably accessible and in usable condition".

Response #25:
There are several MTCA sites that are not on Port-owned property in the near-vicinity of the AOMA of the airport. These MTCA sites have not been caused by activities at the airport and are mostly located along International Boulevard and South 188th Street. Some of these sites have wells screened in the Qva aquifer, and the rationale is that data from some of these wells just outside the AOMA could be useful to help determine hydrogeological conditions and groundwater flow directions within the AOMA. Since the Port doesn't own and control these wells, access to some of them may not be possible because of permission issues, and also if a well was in unusable condition the Port could not restore it

Comment #26:
There must be an explanation as to how the Port of Seattle and Ecology can determine whether "additional hydrogeological data are necessary to complete the modeling" without the benefit of public input.

Response #26:
The public participation process under the Model Toxics Control Act does not require ongoing public input. Whether or not any of the wells chosen for inclusion in the representative set of wells will require additional hydrogeological testing is a technical decision and expertise exists within the Port, Ecology, and the consultants working on the project to make this decision. The Phase I report will describe the construction and results of the model, and it will be open to public review and comment. If the public has issues regarding the representative set of wells the issues can be aired at that time.

Comment #27:
An explanation is needed how a groundwater flow and contaminant fate and transport model utilizing data restricted to the AOMA can be developed which includes the receptor sites and could guide additional investigation activities.

Response #27:
Obviously the modeling cannot utilize data restricted to the AOMA since the receptor "sites" are outside the AOMA. The modeling will utilize data over a large area that encompasses the source area of contamination (the AOMA), the locations of water supply wells, surface water bodies, and additional surrounding area to establish the boundary conditions of the model. The model will provide an assessment of groundwater flow throughout this large area and the transport of contamination via groundwater flow.

Comment #28:
The relationship between the Agreed Order and the National Pollution Discharge Elimination System (NPDES) permit must be explained including how the issuance of a report compiling the evaluating data from the AOMA will be coordinated with the reporting requirements of the NPDES permit.

Response #28:
There is no direct relationship between the Agreed Order and the NPDES Permit for Sea-Tac Airport and no coordination is necessary.

Comment #29:
Explanations must be provided regarding how the Port and Ecology will assess the fuel storage and distribution systems (including the Olympic tank farm and hydrant systems) at Sea-Tac Airport through the Agreed Order. Detailed discussions of how groundwater monitoring will be implemented for these facilities and also the reliability of leak detection systems must be included.

Response #29:
Section IV.6 Parts (a,b,c,&d) of the Agreed Order outline in detail the actions that will be taken to assess the fuel storage and distribution systems. The results of these actions will be reported as part of the Phase I report of the Agreed Order, and will include discussions of the leak detection methods utilized by the fuel storage and distribution systems (including groundwater monitoring if that particular leak detection method is used). The results of the pollution-prevention actions cannot be provided as the comment requests, before the pollution-prevention actions take place.

Comment #30:
The definition of "technically and economically reasonable leak detection and prevention methods" as stated in the Agreed Order should be provided.

Response #30:
As per that statement, the leak detection and prevention methods to be considered are defined in Section IV.6 Part (a) of the Agreed Order.

Comment #31:
The records for all underground storage tanks abandoned in the residential buyout areas must be provided.

Response #31:
Information regarding these abandoned residential tanks is not relevant to the Agreed Order and there are no "records" that were required or that are available regarding these residential tanks anyhow.

Comment #32:
The Agreed Order inappropriately defines provisions of the Model Toxics Control Act for use in the Agreed Order. The Agreed Order must be changed to note that definitions established by the State's groundwater laws shall control the meanings of the terms used in the Agreed Order.

Response #32:
The purpose of the Agreed Order is to evaluate risk to receptors possibly posed by contamination in the Qva aquifer. The contaminant concentrations in this groundwater exceed groundwater criteria in the State's groundwater law, and Methods A and B cleanup standards in the State's cleanup law. The Agreed Order is therefore an investigative remedial action that will be, and can only be accomplished under the authority of the Model Toxics Control Act. The definitions set forth in the MTCA shall control the meanings of the terms used in the Agreed Order.

Comment #33:
A requirement that the study should be undertaken by either a professional registered engineer or by an industrial hygienist registered with the State should be added to the Agreed Order.

Response #33:
The Agreed Order already states in Section V.5 that all work performed pursuant to the Order shall be under the direction and supervision of a professional engineer or hydrgeologist, or similar expert. It is not clear why the expertise and services of an industrial hygienist would be relevant to the work performed pursuant to the Agreed Order and the comment fails to provide any rationale. The requested addition to the Order will not be made.

Comment #34:
Language in the Agreed Order which states "Ecology shall assume that the status quo remains in effect (i.e. the Port is considered the local government land-use permitting agency for purposes of this Order)" must be removed because this language prejudices the pendant land-use jurisdictional litigation between local cities and the Port of Seattle.

Response #34:
This language was removed and other language was provided in the final Agreed Order that describes the current situation regarding the litigation on that issue.

Comment #35:
Language in the Agreed Order which states "This Order is not appealable to the Washington Pollution Control Hearings Board. This Order may be reviewed only as provided under Section 6 of Chapter 70.105DRCW" must be removed.

Response #35:
The Agreed Order is a remedial action being done in response to contaminants in groundwater that are in excess of MTCA cleanup standards. As stated in Section VII.1(D) of the Agreed Order, the process to appeal investigative / remedial decisions made by Ecology is specified in Section 6 of the MTCA cleanup law. This process does not include the option of a citizen appeal to the Washington Pollution Control Hearings Board. Removing this language from the Agreed Order will not change the appeals process as specified under cleanup law and the language will not be removed. The cleanup law would have to be changed in order to change the appeals process for remedial actions.

Comment #36:
The Agreed Order was developed through consultations with Department of Ecology personnel paid directly by the Port of Seattle, and the propriety of this circumstance should be explained.

Response #36:
The comment is incorrect. No Department of Ecology personnel are or have been paid directly by the Port of Seattle or any other potentially liable person (PLP). During some of the consultations on the Agreed Order, the time of an Ecology staff person was dedicated fully to Sea-Tac Airport through an arrangement with the Port of Seattle known as "Prepaid Cleanup Oversight". The purpose, intent, and conditions of the Prepaid Cleanup Oversight (PCO) arrangement are outlined in Department of Ecology Policy

500C. PCO is one of several mechanisms utilized by the State to recover the costs of Ecology staff time from PLPs. Under the particular PCO cost-recovery arrangement a PLP conducting cleanup actions must pay for Ecology staff time in advance. This "prepaid" money however is not paid directly to Ecology personnel or even to the Department of Ecology. Ecology has had many PCO arrangements with various PLPs including the Port of Seattle, and it part of Ecology's normal process of conducting business. There is no impropriety in this process as the comment implies.

Comment #37:
An article in the Port of Seattle's publication, *Forum*, about the Agreed Order stated that "much is already known about the groundwater and the contamination beneath the Airport Operations and Maintenance Area". RCAA has no understanding that this is the case.

Response #37:
There is voluminous information documenting cleanup actions and environmental investigations throughout the AOMA. Numerous monitoring wells exist throughout the AOMA. If RCAA were to examine all this information then it would understand that "much is known about the groundwater and contamination beneath the AOMA".

Comment #38:
An article in the Port of Seattle's publication, *Forum*, about the Agreed Order stated that the groundwater study would provide "a big picture review of groundwater conditions". RCAA considers that this assumption is flawed.

Response #38:
The groundwater flow model will utilize hydrogeological data from a large area that encompasses the AOMA, the entire airport, the areas of all receptors, and additional area to establish boundary conditions of the model. Ecology considers that represents a rather "big picture".

Transcript from May 21, 1997 Public Meeting

Speaker 12: Carl Mealy
Water Commissioner, King County Water District 54

The water district's wells are located at S. 219th and one of our wells shares the same aquifer with Highline.

We feel water is a precious commodity and we don't want to see these wells put at risk. We appreciate the study being done and we expect a full and unqualified assessment, both of the risk and of the recommendations. We've been in the business of providing water for over 60 years and it's a high quality water source. And our customers expect that quality of water for generations to come. The airport has been in business for 50 years and we now understand that there has been contamination. We're in the business of living and learning. [When Roger presented this map before showing essentially the 10-year well-head protection zone, we're talking about contamination of 50 years. We're talking wells that are viable for 100's of years at a time. So we'd appreciate it if you'd give a picture that shows a much larger span of time realistic for what the life of wells are.] 1

2 [As for our concerns, we want to make sure that the study not only addresses past contamination, but also looks at future potential. Looks at both what happens within the ground and what runs across the ground as surface water contamination for potential downstream points of contamination. We want to look at both what happens with how water comes through soil now and what can happen as a result of changes in the surroundings.] 2

3 [In addition, and Roger I don't know if I misunderstood what you were saying before on this map, but does the AOMA not include the fuel depot or is the fuel depot included in the AOMA? We're concerned if it's not. (It's not). This seems like a major fault for not having that depot in there, and we advise before you take on Stage 1 that you include that in there, and if not, I think it would cause us to question the study.] 3

4 [Next we want to make sure that this study and what it does in the work does not cause further contamination to occur or increase the possibility that contamination could go to the wells. We believe Ecology should be very careful in that, but we want to note that concern. We don't want to have any further risk of contamination.] 4

Next we want to make sure that the study incorporates what the airport believes is its final expectations for the site in the future and take into consideration that for possible potential areas of contamination including what was cited before. We also feel there needs to be a clear demonstrated understanding of the hydrology of the area, not schematic or modeled. We need to understand what the hydrology looks like or we all could be caught off guard.

Last, we expect to be kept abreast of the progress during the study not just at the time of the results.

Thank you.

Response to comments by Carl Mealy, Commissioner, King Co. Water District #54 on behalf of the District
Comments were presented orally at the May 21, 1997 Public Meeting.

Comment #1:
The map (presented at the public meeting) showing the public water wells indicated the maximum 10-year wellhead protection zones for these wells. There has been contamination at the airport for 50 years, and these wells are viable for hundreds of years. The groundwater study should present a picture of wellhead protection that reflects a much longer time span.

Response #1:
In order to evaluate risk that could possibly be posed to public water supply wells from contamination at Sea-Tac Airport, it is first necessary to determine if contaminant pathways exist from the airport to the wells. Then if so, it is certainly necessary to determine the travel times of contaminants along those pathways, whatever the travel times are. Since this groundwater study is about contamination originating at Sea-Tac Airport, the maximum time span of wellhead protection that will be presented will be based on contaminant travel time from the airport.

Comment #2:
The study should not only address past contamination, but should also look at the potential future of contamination. To look at future contamination, the study should:
(1) Consider what happens to contamination within the ground and also what happens to contamination that runs across the ground in surface water that causes downstream points of contamination.
(2) Consider how water comes through the soil now and what could happen as a result of future changes in the surroundings.
(3) Consider potential future areas of contamination in the light of what the final expectations for the airport in the future are believed to be.

Response #2:
Part 1 of the Responsiveness Summary provides response to this comment.

The scope of the groundwater study is to examine the behavior of known and potential contamination in groundwater originating beneath the AOMA of the airport beginning with the regional water table, or Qva aquifer. The modeling will allow the behavior of this groundwater contamination to be simulated in time and projected into the future.

The groundwater study will not examine the behavior of contaminants in the unsaturated or "vadose" zone above the Qva aquifer. There are already considerable empirical data regarding the behavior of contaminants in the unsaturated zone that has been accumulated at the airport via numerous environmental investigations. The only critical component of that behavior is, given the kinds of facilities and operations that have existed within the AOMA over the years; hazardous substances do make it down to the Qva aquifer.

The groundwater study will not evaluate effects from assumed specific future areas of groundwater contamination from assumed future sources of contamination based on future construction of facilities at the airport. The modeling will be calibrated to known contaminant conditions and known sources of contamination. The groundwater study however, will provide a conceptual model and understanding about the behavior of contamination in the hydrogeological environment of the airport in general.

It is not within the purpose and intent of the Agreed Order to expand the groundwater study to become a surface water study as well and evaluate the behavior and effects of contaminants spilled into streams. As stated in the Agreed Order, the potential for contaminants in groundwater to seep into surface waters will be evaluated in the groundwater study. If such a determination is made, then appropriate remedial actions and an evaluation of the behavior of contaminants in the stream will be accomplished at that time, but not within the scope of this Agreed Order.

Comment #3:
The fuel depot was not included in the AOMA on the map presented at the public meeting. The fuel depot must be included in the study or the study would be questionable.

Response #3:
The Olympic bulk fuel storage depot south of Sea-Tac Airport is a major facility that stores and handles large quantities of jet fuel. The depot will be included within the AOMA and will be considered in the groundwater study.

Comment #4:
Ecology must be very careful to insure that the work done to accomplish the study does not cause further contamination to occur or increase the possibility that contamination could go to the wells.

Response #4:
The comment is well taken and reflects Ecology's similar concern about spreading contamination by deep drilling given the particular circumstances of contamination at Sea-Tac Airport. The risk comes from drilling through an unknown zone of contamination trapped at shallow depth and the drill hole provides a pathway for the contamination to reach deeper groundwater.

Precautionary measures can be taken during the drilling to preclude this scenario, but these measures are expensive ("double drilling" is required) and some guesswork is involved. Once the well is installed, there must also be ongoing precautionary measures to insure the well doesn't provide a conduit for contaminants at the surface (storm water, spills) to reach deeper groundwater. The wellhead must be maintained and the location and significance of the well must be made known to those that are conducting airport operations or construction activities in the vicinity of the well. If the well is no longer needed, then precautionary measures must be taken when abandoning the well.

Any new wells installed during Phase II of the Agreed Order will at a minimum be drilled to the Qva aquifer. All possible precautions will be taken in the planning, installation, and maintenance of these wells, and the requirements of the state regulations pertaining to wells (WAC 173-160) will be followed.

Comment #5:
There needs to be a clear demonstrated understanding of the hydrology of the area, not schematic or modeled.

Response #5:
An absolutely clear understanding of conditions beneath the ground is never possible particularly at greater depths because of the difficulty in obtaining abundant information from the deep subsurface. Any understanding about conditions in the subsurface must be derived from pinpoints of information, which are the logs from wells that have been drilled. Subsurface conditions between wells must be interpolated and interpreted.

Data from numerous well logs will be used to compile the hydrostratigraphic information that will be used in the groundwater flow model and the model will cover a large area that includes the airport and the locations of the "potential local receptors" identified in the Agreed Order. Results of the modeling will be verified by drilling during Phase II of the groundwater study. Short of drilling thousands of holes, this groundwater study will provide the clearest understanding of the behavior of groundwater and contaminants in groundwater in the area of Sea-Tac Airport that has been derived to date.

Comment #6:
It is Water District 54's expectation to be kept abreast of the progress of the study, not just at the time of the results.

Response #6:
Ecology considers the Water Districts in the vicinity of Sea-Tac Airport as primary stakeholders in the STIA groundwater study and values the professional expertise of personnel in the districts to provide input to and evaluate the study. At the outset of the study Ecology met with representatives of Seattle Public Utilities (operates the Highline well field), the Highline Water District, and King County Water District 54 to answer questions and discuss the study. Ecology has subsequently responded to telephone requests for information regarding the study, and it is anticipated that fact sheets and subsequent meetings will take place.

Transcript from May 21, 1997 Public Meeting

Speaker 13: Warren Pugh

I'm on the Aquifer Committee for the City of Seattle on their wells they have in the aquifer. But one thing I was concerned about Roger's comment on the water going through the aquitard down to the aquifer and when it gets to the water table it quits. I don't know who he's trying to kid. It will soak right into the water. The water contaminates the water; it doesn't stop just at the water table. And it's just like dropping a drop of poison into a glass of water. It's not going to stop at the top, it'll go to the bottom and it will spread throughout the whole aquifer. 1

The fuel tanks are on the south side of 188th, which the last portion of this alluded to. Those are approximate to the aquitard to the south, about 50 feet down below the level of the airport, and they would be partly into the aquifer itself. So it creates quite a damage. Those tanks really, I feel, should have a concrete reservoir around the tanks that would hold the whole volume of the tank if it leaked. Otherwise, it is going to run off into groundwater and everything else if somebody leaves a valve open like I understand they did, and it will really create a terribly lot of spill. 2

And he mentioned the volatility. I sort of agree that I always felt it wasn't that volatile until I was reading some of the reports on Flight 800 which said that the tank blew up from a spark in the fuel tank in the center of the plane. 3 So we talk about danger of the volatility of the fuel.

And as far as the oil pipes or the pipelines they have going around the airport, I feel that they should be tested at least once every year because when a leak goes, it goes. He said it had gone for two years since they last made a test of those pipes. They could lose an awful lot of fuel into the ground and they wouldn't know the difference. 4

Thank you.

Response to comments by Warren Pugh
Comments were presented orally at the May 21, 1997 Public Meeting.

Comment #1:
It was stated at the public meeting that (contaminated) water goes down through the aquitard to the aquifer and then stops. This statement is not true. The (contaminated) water doesn't stop at the water table; it contaminates the whole aquifer similar to putting a drop of poison into a glass of water.

Response #1:
During the public meeting, Ecology attempted to describe the behavior of fuel products, by far the most abundant contaminants at the airport, in the subsurface environment. It was stated that when the fuel itself as a product infiltrates down, it stops when reaching groundwater and floats on the groundwater, which is what happens. Some of the floating fuel then dissolves in the groundwater, and the dissolved components of the fuel can go anywhere in the aquifer, although maximum concentrations tend to remain near the floating fuel. There are hazardous substances such as solvents that, unlike fuel products do not stop when reaching groundwater and can pose a more serious risk to groundwater than fuel products.

The analogy of the drop of poison in a glass of water implies that the process of contamination in an aquifer happens rapidly and the contaminants spread uniformly throughout the entire aquifer. That is not what happens and it is not a good analogy. Contamination in an aquifer can only spread as fast as the groundwater flows, which is slow and is quantified in terms of feet per year. Furthermore, the concentration of the contamination generally decreases in the aquifer with distance from the contaminant source area.

Comment #2:
The fuel tanks on the south side of 188th are about 50 ft. down below the level of the airport, and they would be partly into the aquifer itself so could create a lot of damage. These tanks should therefore be surrounded by a concrete reservoir large enough to hold the whole volume of a tank if it leaked because otherwise, a lot fuel will be spilled into the environment such as happened once before.

Response #2:
The comment refers to the Olympic bulk jet fuel storage facility south of the airport. This is an astute comment, and the hydrogeological setting of the Olympic facility and potential groundwater contamination associated with it will be evaluated in the groundwater study.

The notion of a concrete reservoir surrounding the Olympic facility is called "secondary containment". Secondary containment is required by state regulations (WAC 173-180A) for aboveground storage facilities such as the Olympic facility. The regulations require that the secondary containment must be large enough to contain a full release from the largest storage tank at the facility. The regulations don't stipulate that the secondary

containment must be constructed of concrete, and for large facilities such as the Olympic facility the secondary containment consists of an earthen berm, which is allowed.

Comment #3:
It was mentioned in the public meeting that (jet fuel) was not that volatile, but the explosion of TWA Flight 800 from a spark in the fuel tank would indicate that isn't true.

Response #3:
This comment again relates to Ecology's attempt at the public meeting to describe the behavior of fuel products in the subsurface environment at the airport. The point was made that some hazardous substances when released into the environment pose greater risk to the environment than other hazardous substances, because some dissolve in groundwater more readily than others do, and hence are more mobile in the environment. The mobility of a hazardous substance in the environment is related to its volatility. It was stated that jet fuel, the most abundant contaminant at the airport, was not as volatile as other hazardous substances (gasoline for example) and thus not as mobile, and poses not as great a risk to the environment as other more volatile substances do. The fact that jet fuel is less volatile and less mobile in the environment that other hazardous substances is not relevant to the fact that jet fuel can explode given the right conditions.

Comment #4:
It was stated in the public meeting that the pipelines that go around the airport were tested for leaks two years ago. The pipelines should be tested at least once every year, otherwise a lot of fuel could be lost in the ground and no one would know the difference.

Response #4:
The fundamental issue about detecting leaks from pipelines that carry large amounts of fuel is how small of a leak can be detected. The higher the volume of fuel carried by a pipeline, the more difficult it is to detect small leaks. It is difficult to quantify what a "large" leak is and what a "small" leak is. Large leaks in the pipelines can be detected by observable drops in operating pressure or through discrepancies in inventory control (how much fuel goes into the system vs. how much fuel comes out). Small leaks are not detectable under the routine operating circumstances of these pipelines at the airport.

The tests mentioned in the public meeting that were done on the pipelines were custom, sophisticated tests designed to detect small leaks. The tests were cumbersome, expensive, took several days, disrupted aircraft operations and cannot be done on a routine basis. Because of the technical difficulties, there were no federal or state regulations that required leak detection capability for small leaks on these pipelines, and the tests were done voluntarily.

A new underground pipeline system to transfer jet fuel is in the planning stages at the airport. Unlike the pipelines that were constructed some 40 years ago, modern technology will provide leak detection capability for small leaks in the new pipelines. Currently four out of the five older "hydrant" pipeline systems at the airport have been closed down and tested for contamination as required.

Transcript from May 21, 1997 Public Meeting

Speaker 15: Vivian Matthews

The Port of Seattle is counting on the fact that they can excavate up to 6 million cubic yards of dirt on Port property to use as fill for the proposed 3rd Runway. Earlier this spring my husband and I visited Mud Mountain Dam near Enumclaw, at one time one of the largest earth filled dams in the US. This dam is 400 feet wide and contains 2.39 million cubic yards of dirt, enough to fill 120 miles of connected railroad cars. Imagine the size of the hole 6 million cubic yards of dirt would make. Holes of this magnitude would be well into the drinking water aquifer layer that underlies all of SeaTac Airport.

So much for the dirt plan.

Response to comment byVivian Matthews
The comment was presented orally at the May 21, 1997 Public Meeting.

Comment #1:
The Port of Seattle will be excavating up to six million cubic yards of dirt on Port property to use as fill for the Third Runway. The excavation holes for this much dirt would extend well into the drinking water aquifer layer that underlies all of Sea-Tac Airport which cannot be allowed.

Response #1:
Removal of large amounts of material above an aquifer would change the local recharge characteristics of that aquifer, but it does not follow that the aquifer would be contaminated by removal of the material although it would be less protected. The Agreed Order is all about contamination in groundwater at Sea-Tac Airport and its possible effects on drinking water supply wells and surface waters. The effects on groundwater caused by borrow areas for Third Runway fill are not within the scope of this Agreed Order and this issue is dealt with under other processes such as the Environmental Impact Statements and the 401/404 Permit for the Third Runway.

May 21, 1997

Received at Public Meeting
5/21/97 R. Nye

Mr. Roger Nye
Department of Ecology
3190 160th Ave SE
Bellevue, WA 98008-5452

RE: AGREED ORDER #97TC-N122

Clean drinking water is a precious resource within the Puget Sound Region. In the future, this resource will become even more valuable as greater demand is placed upon the existing system and as more supplies become contaminated. It is the responsibility of the Department of Ecology to work to protect this resource, not to enter into a partnership with a major industrial polluter to hide the problem from the public. It is not the industrialists who will suffer in the future if these resources are lost. Business is busy presently making great profits at the expense of our environment and these people will be able to afford to buy the $10.00 glass of clean water in the future. It is the average person, the ones that are at these types of meetings, who will not be able to afford either to clean up the problem or to buy the necessary resources to sustain their families.

1 [The Department of Ecology's AGREED ORDER says that they are trying to assure that the pollution leaching downward at Sea-Tac Airport will NOT CONTAMINATE DRINKING WATER SUPPLIES. The focus of this study should instead be to STUDY THE PROBLEM OBJECTIVELY, FIND WAYS TO REMEDIATE THE EXISTING PROBLEMS WHICH WILL SURELY, EVENTUALLY CONTAMINATE THE DRINKING WATER SUPPLY, IF NOT SO ALREADY, AND FIND WAYS TO COMPEL THE PORT AND THEIR TENANTS TO INSTALL BETTER SYSTEMS SO THE PROBLEMS WILL STOP!!!] 1

2 [Instead, the study area is too small. It should be expanded to include the entire airport area, as all hydrant lines that have leaked in the past run the entire area and length of the airport. And the area should include the environs of the airport since dumping of contamination from one spot to another has occurred around the airport area since the 1940's.] 2 Oils, grease, solvents, PCE's, PCB's, glycols and a host of other contaminants pose a very real and serious environmental health threat. These chemicals have serious effects on people, animals and the environment and must be remediated. Two tablespoons of ethylene glycol can kill a dog, blind a person.3 [This chemical does not continue to biodegrade once it is away from sunlight and oxygen. There is a great possibility that ethylene glycol is deposited in clays that are supposedly protecting the aquifer. These could eventually contaminate the entire drinking water aquifer system.

The anti and deicing chemicals also contain a number of other extremely toxic compounds that are not even being considered in the sampling regime.] 3 Recently, an NBC Radio

Mutual News show uncovered significant contamination in a number of streams near several major US airports. It seems that nearly every major city with an airport is facing the same problems with nearby open waterways that are visibly contaminated. It is ludicrous that citizens can see the problem, they can smell it, it is making people sick, has the potential to kill living things and devastate the environment, yet we are only getting a modeling exercise?

4 Modeling will produce the results that are intended from the outset. 4 I am surprised that the conditional certification happened only a few months ago, yet this study has been planned for years. It appears that the plan to circumvent the CWA and AAIA was being planned for some time by a partnership between DOE and the Port. Who or what does the DOE represent? Are they truly being objective with this study?

The certification depends upon a verifiable compliance with the Clean Water Act. Realistically, there is not any reasonable way that Sea-Tac could comply with the provisions of the CWA or WAC 173-200 considering the degree, scope and magnitude of ground, groundwater, surface water and stream contamination problems on and off airport property.

To be able to comply, 5 the Port should be required to pay to have an independent lab analyze soil, water samples from every area around the airport and on airport property. The Port should then pay to have the already acknowledged confirmed contaminated sites Ecology has recognized dug up and remediated. Then any new sites of contamination found by independent study should be cleaned of all pollutants. 5 Any fuel and wastewater system that does not comply with BACT should be replaced. Glycol 100% recovery system should be installed, or infra-red deicing facility should be built.

Thank you for your time.

Debi L. DesMarais

Debi L. DesMarais
President, C.A.S.E.
19900 4th Ave SW
Normandy Park WA 98166
(206) 824-3120

Response to comments by Debi L. DesMarais
Comments were received in a letter dated 5/21/97.

Comment #1:
The Agreed Order is to try and assure that the pollution leaching downward at Sea-Tac Airport will not contaminate drinking water supplies. The focus of the Agreed Order should instead be to (1) remediate the existing problems which surely will, or already have contaminated drinking water supplies, and (2) compel the Port and their tenants to install better systems so the problems will stop.

Response #1:
Part 1 of the Responsiveness Summary addresses much of this comment.

Ecology disagrees that it is a certainty drinking water supplies are already or will eventually be contaminated by pollution at Sea-Tac Airport, and that the Agreed Order should not focus on this issue. Ecology considers that the possibility of contamination in groundwater at Sea-Tac Airport posing risk to drinking water supplies and surface waters is an issue that should be further evaluated. Furthermore, if the study indicates risk, then information concerning that risk (such as the pathways, travel time, characteristics of contamination, etc.) is required in order to implement appropriate actions that specifically mitigate the risk. This is the focus and rationale of the Agreed Order and it will not be changed to generally focus on all cleanup at the airport which could go on for years, and where cleanup at known sites has already been progressing. The results of the groundwater study however could have bearing on the suitability of cleanup actions that are currently underway.

The risk of releases from underground storage tank systems and airport hydrant systems at Sea-Tac Airport that caused most soil and groundwater contamination in the past has been significantly reduced during recent years. The Washington Underground Storage Tank (UST) Regulations (173-360 WAC) mandate that UST systems (tanks and piping) must now meet rigorous requirements to both detect and prevent leaks. These regulations did not exist prior to 1990. The UST systems operated by the Port and tenants at Sea-Tac airport under the purview of these regulations have been replaced or upgraded with modern UST systems. As part of the Agreed Order, Ecology will inspect the UST systems at the airport to insure compliance with the UST regulations.

Four out of the five airport hydrant systems that were built 30 – 40 years ago have ceased operating and have been or will be decommissioned in accordance with the UST regulations, which includes testing for contamination. The remaining operational hydrant pipeline (operated by United Airlines) was tested in 1996 and no leaks were found. The UST farm that is part of this hydrant system has been improved and upgraded. A new underground fuel distribution system that eliminates the need for the UST farms is in the planning stages at the airport. Once this new system is in operation, the last of the old hydrant systems will be decommissioned.

Comment #2:
The study area is too small and should be expanded to include the entire airport area because all hydrant lines that have leaked in the past run the entire area and length of the airport. The study area should also include the environs of the airport because dumping of contamination from one spot to another has occurred around the airport area since the 1940s.

Response #2:
The response to this comment is provided in Part 1 of the Responsiveness Summary.

All hydrant lines at Sea-Tac Airport are fully contained within the AOMA as shown on the map in Appendix 1 of the draft Agreed Order. The statement about dumping of contamination around the environs of the airport is too vague to provide a response. It is not clear what the "contamination" could be that was dumped or what "environs" of the airport would include. However, in response to general public concern that there are many contaminated sites related to the airport outside the AOMA, the research that will be conducted to identify potential areas of groundwater contamination from historical operations, will include the airport outside the AOMA.

Comment #3:
There is a great possibility that ethylene glycol is deposited in clays that are supposedly protecting the aquifer. These could eventually contaminate the entire drinking water aquifer system. The anti and deicing chemicals also contain a number of other extremely toxic compounds that are not even being considered in the sampling regime.

Response #3:
The comment provides no reference or rationale for the statement that ethylene glycol is deposited in the clays of the deep aquitards so a specific response cannot be provided. In general, given the contaminant transport distances involved and the impermeable nature of the deep aquitards, this statement would appear on the surface to be unlikely. Investigative remedial actions in some gate areas at the airport (where glycol is initially sprayed on the aircraft and the potential for subsurface contamination from glycol is greatest) have reportedly found minimally detectable glycol levels in soils and groundwater. The single known occurrence of glycol reported to Ecology that exceeds cleanup standards in groundwater at Sea-Tac Airport is in a small shallow area associated with an underground storage tank.

No groundwater chemical data will be acquired during Phase I of the groundwater study and there was no "sampling regime" proposed in the Agreed Order. Groundwater chemical data will be acquired during Phase II of the groundwater study. An addendum to the Agreed Order will describe Phase II actions and includes a proposed sampling regime will go out for public comment.

Comment #4:
Modeling will produce the results that are intended from the outset.

Response #4:
The STIA groundwater study is intended to be credible to the scientific community. No scientific investigation would be credible if there were "results intended from the outset". Modeling technology is an accepted scientific tool and is often the only reasonable way to examine natural phenomenon over large areas (such as weather, groundwater flow, etc.). To produce "real" results, any model must be constrained by real data. Abundant data already available and additional data to be acquired will be utilized in the modeling for the groundwater study. A degree of variability or "non-uniqueness" is inherent in most models. The modeling for the groundwater study will make conservative assumptions and evaluate "worst case" conditions that could reasonably occur. Furthermore, wells will be placed and data taken to confirm the model during Phase II of the Agreed Order as described in an addendum. All aspects of the modeling (boundary conditions, grid system, hydrogeologic cross sections, chemical data, etc.) will be presented and be open to public scrutiny and comment.

Comment #5:
Soil and groundwater should be investigated throughout airport property and in "every area" around the airport. The known MTCA sites at the airport should be dug up and remediated, and all new contaminated sites discovered during the investigation cleaned up. These actions should be carried out independent of the Port of Seattle, but the Port should pay for the actions.

Response #5:
Response to this comment is provided in Part 1 of the Responsiveness Summary.

The comment calls for extensive soil and groundwater investigation on a huge scale, i.e. not only of the AOMA, but of all airport property and of "every area" around the airport as well. This approach assumes all soil and groundwater on airport property and "every area" around the airport is potentially contaminated above established cleanup standards, a concept that current environmental data does not support. In general terms, remedial actions have to be "doable" and practicable in terms of resources and risk. Remedial investigations for any large industrial property that has a long, complex history of using hazardous substances typically focus on areas identified as having probable cause for release of contaminants. The known soil and groundwater contamination at the airport can be related to particular known facilities and mechanisms.

Remedial investigations of soil and groundwater are part of cleanup actions at the known MTCA sites at the airport and, more recently as required by the UST regulations, along the four hydrant pipelines that have been closed. The Agreed Order evaluates the risk posed by contamination in groundwater at the airport on a large scale, and requires that historical areas at the airport within and including a ¼ mile distance from, the AOMA with probable cause of impacting soil and groundwater be identified. In response to public comment, any areas with probable cause of posing risk to the receptors identified in the Order throughout the airport outside the AOMA will be identified as well. Any new contamination discovered through this process, other environmental evaluations,

construction projects, etc. must be reported to Ecology and addressed through MTCA requirements.

Remedial actions at the known MTCA sites have been ongoing for several years. There is no time limit for completing cleanup specifically mandated in the MTCA unless there is a demonstrable immediate threat to human health and the environment. The MTCA process allows many choices for remedy selection based on site-specific conditions, and does not require that all contamination be "dug up". Digging up all contaminated soil at Sea-Tac Airport to accomplish remediation would be impracticable.

Most major cleanup at Sea-Tac Airport is not done directly by the Port of Seattle, but rather is done by the "potentially liable persons" (PLPs), which are various tenants that have operated facilities that released hazardous substances. The Port is also a PLP however, because it owns the property. There is no regulatory mechanism by which the Port or any other PLP could be compelled to pay for cleanup actions and at the same time be uninvolved in those cleanup actions except in the extreme case where there is defiance of an Enforcement Order.

STIA Ground Water Study

Henry J. Frause
411 S.W. 186th
Normandy Park, WA., 98166-3959

To: Mr. Roger Nye,
State of Washington Department of Ecology,
NorthWest Regional Office
3190 - 160th Ave. S. E.
Bellevue, WA., 98008-5452

To: Mr. Dennis Ossenkop
Federal Aviation Administration
Northwest Mountain Region
1601 Lind Avenue Southwest
S.E. Renton, WA. 98033-4056

CC: Ms. Christine Gregoire Attorney General
High/Licenses Building
P.O. Box 40100
Olympia, WA., 98504-0100

Ref.: (1) National Environment Policy Act (NEPA).
Section 1503.4 (5).
(2) Federal Register Docket No._____

Subject: Response to the Port of Seattle's Ground Water Study, Prepared by the Washington Department of Ecology, Relative to the "Agreed Order # 97TC-N122.

Dear Sirs: (Mr. Nye/ Mr. Ossenkop),

The following comments are submitted in response to the subject "Ground Water Study". Please be aware of the **impact** that this study has relative to the final **Decision of Record.** My comments, herewith, do not address the "ground Water Study" per se. They do , however, apply to the total packaging procedure related to the FEIS. The FEIS along with the Final-Rule summary cannot exist in any Supreme Court decisions without a Federal Docket No. to show the full continuity of the FEIS. 1

The composition of any item, according to mathematics, is the sum total of all its parts. an automobile, for instance; a house; an apple or an orange; a Walla Walla onion... You get the idea? Each one is complete in itself.

The Final EIS controls the engineering procedures that shall be applicable to the 3rd runway of the Port of Seattle's STIA, [Seattle Tacoma International Airport]. The Study, like the other examples noted above, is a total entity.

The equation, therefore, must be followed...in order to receive the State's Certification.

Equation. A = [B + C + D + E + F] (A) is the Final EIS.
It consists of (B) the Draft EIS +
(C) the Final EIS with [Docket No.] +
(D) the Draft Supplemental EIS +
(E) the Final Supplemental EIS with [Docket No.] +
(F) the "Ground Water Study" with [Docket No.]. 1

STIA Ground Water Study

Gentlemen, here are the facts. Both of you took an oath of allegiance that you would perform the duties of protecting the Nation and "We The People" from any invasion of our privacy and/or our Bill of Rights in accordance with the Constitutional statutes of the United States.

- How do you justify the fact that you are now participating in an illegal marriage known as Municipal Corporation? The term "Municipal Corporation" is nothing more than a title of a treatise written by Mr. John Forrest Dillon as a necessary requirement to receive his Doctor of Law degree from the Univ. of Iowa. During his term as a Federal circuit judge In 1872, he and his printer published his book entitled Municipal Corporations.

What has happened in recent years is that the marriage known as Public/Private has been replaced by another marriage known as Municipal Corporation. The State of Washington is deeply involved with this marriage via the Justice System. Take a look at any law suit involving a municipality and you will see that it reads as follows: "....the City of Burien.....a Municipal Corporation". In this grammatical form, the word Municipal is merely an adjective modifying Corporation. It has no legal meaning at all. The antecedent of Municipal Corporation is not "Municipality". A Municipality is not a Municipal! or visa versa.

On the other hand, the State of Washington Legislature authorized the Port of Seattle to be a separately constituted municipal corporation (* one agency) with unlimited authority; followed later by a declaration from the governor that the State no longer could or would interfere with the decisions of a quasi-government operating under Corporational by-laws.

Even as I am writing this letter the illegal marriagaes are prevalent in the subject "Ground Water Study" and other EIS Studies. There's the governmental agency (DOE) married to the Port of Seattle; the Port is married to the (FAA); The Port is married to the (EPA). 2[These agencies are Constitutionally protected as long as they are not controlled by the Port of Seattle. To do otherwise places the Port of Seattle in an authoritive position above that of the President of the United States and thereby categorizes him along with us as "We The Slaves" thus removing him also from his civil rights and his bill of rights.]2

- I need an authorative rendition of Dillon's Rule. I'm quite sure that it is not an acceptable legal definition. We are not to be subjected to the level of slavery at the expense of Million aire CEO's hiding behind the term Corporations that provide us with an empty bag with the words "Economic Development" silk-screened on it.

2[When I am satisfied with just what the administrative procedures are that we are being subjected to will I be able to address the "Clean Water Study".]2 I have never yet seen any **STUDY** brought to a conclusion. Studies seem to be an ongoing thing and each study costs the taxpayers a lot of money; yet, they are not getting anything in return for their assessments.

The last day to turn in comments is June 6th. Therefore, it becomes mandatory that an answer is submitted to me as soon as possible. I remain,

Yours truly,

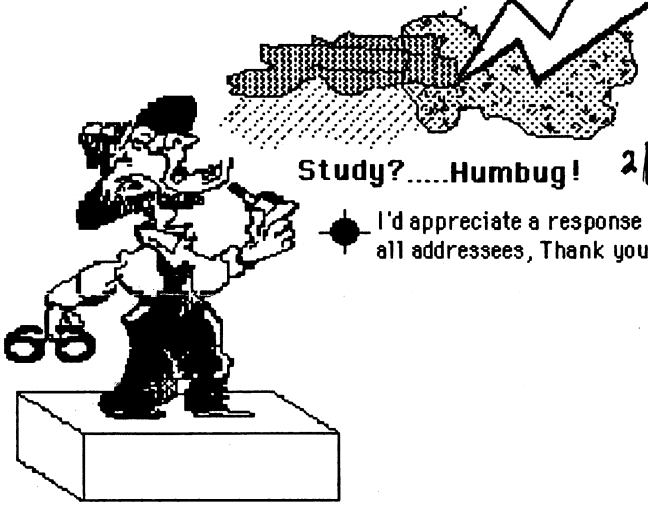
Henry J. Frause

Henry J. Frause (PH. 242-0950)

May 21, 1997 2 of 2

A MESSAGE FROM____ GUESS WHO

ROGER
FOR YOUR INFORMATION



To: Ms. Christine Gregoire
From: Henry J. Frause

Study?.....Humbug!

[Subject: Port of Seattle's... Ground Water Study]

I'd appreciate a response from all addressees, Thank you.

Christine,

The attached letter is the one I sent to Mr.Roger Nye, State of Washington Department of Ecology, Northwest Regional Office, 3190 - 160th Ave. S.E., Bellevue, WA., 98008-0100, in response to a Public Hearing held last night at the Burien Library. I'm sending it to other VIPs as well.

[My comments were focused on the packageing procedure. I intend to submit additional comments related to the Study itself, but I am searching for administration procedures that I think need to be addressed before the Port of Seattle establishes any kind of corporational by-law directives that will override the Department of Ecology's findings.

I feel that it is highly improper that the Port holds a heavy hand over the State Agency and presents its own private inputs as a means of reducing its overall costs.

The Port was given authority by the Legislature to operate an airport only. The Port was given no authority to operate and conduct a Scientific Research Laboratory nor to act as a Municipal Corporation under Justice Dillon's Rule.

If the Port intends to apply any of its quasi controls and overrides Constitutional Agencies...it will be demonstrating a degree of contempt that smacks of and smells like a possible conspiracy.]

Public/Private suggests cooperation between 260 million inhabitants and certain Corporations. This identifier was changed to read Municipal Corporation. Dillon also identified it as a marriage, and it also has been called a partnership.

No matter how thin you cut it, it still is bologny; and no amount of marketing can sell bologny mixed with mustard. It won't work. Mixing Governmental Agencies with Private Corporations can lead to Treason. So I need your answer, please. Thank you.

SENDER:
Henry J. Frause
411 - SW. 186th
Normandy Park, WA., 98166

May 22, 1997

1.

File: A Message...

Response to comments by Henry J. Frause
Comments were received in a letter dated 5/21/97.

Comment #1:
The STIA groundwater study should be incorporated as an element in the Final Environmental Impact Statement (FEIS) for the Third Runway and other Sea-Tac Airport expansion projects.

Response #1:
The purpose of the STIA groundwater study is to evaluate the risk situation associated with contamination in groundwater at Sea-Tac Airport, and the study has nothing to do with construction of the third runway or other expansion projects at the airport. There is no rationale for the study to be incorporated into the FEIS.

Comment #2:
The Port of Seattle has no authority as a municipal corporation to conduct the groundwater study project for its own purposes, and then seek approval for the project by exercising control over a constitutionally-protected governmental agency such as the Department of Ecology. To do so would be illegal, a violation of "Dillon's Rule", an act of conspiracy, would lead to treason, and remove citizens, including the President of the United States, from civil rights and the bill of rights. The administrative or "packaging" procedures by which the STIA groundwater study is being carried out must be clarified.

Response #2:
The STIA groundwater study is not being conducted under the authority of the Port of Seattle. The study is a remedial action being carried out under the authority of state law specifically RCW 70.105D - the Model Toxics Control Act- Section .030 (1)(a), which defines Ecology's powers and duties. The Port of Seattle's authorities as a municipal corporation and "Dillon's Rule" are irrelevant.

Elizabeth A. Cairns
P.O.Box 68041
Seattle, Wa. 98168

Received FAX 5/21/97
R.Nye

Roger Nye
Department of Ecology, N.W. Regional Office
3190 160th Ave. S.E.
Bellevue, Wa. 98008-5452

21May97

Re: Ground Water Study at Airport,Agreed Order # 97TC-N122.

Dear Mr. Nye:

Thank you for the opportunity to comment on the referenced Order. I've listed below a few of my many concerns about this procedure as called out in the Order.

Comment: 1 [Please be advised that subject Order was unavailable to me at Valley View Library on May 16,1997 and, when the Librarian called DOE number listed on your brochure, the message she recieved was "We are on Vacation for 14 days".

Remedy: Extend the Public Comment period appropriately persuant to WAC 173-340-600.]1

Comment: 2 [The Port of Seattle (Port) has owned and operated STIA since it opened in 1944. Numerous facilities including passenger terminals, bag and cargo facilities, ground transportation facilities and aircraft maintenance and fueling facilities have been constructed and used at STIA since its opening.

Remedy: Since these operating facilities cover much more area than the aircraft operational and maintenance area (AOMA) and since the Qva Aquifer is unconfined below STIA, test the entire facilities areas. You could test under the runways by using the Slant Method]2.

3 [It is a well known fact the Highline Water Pump, which furnishes The city of Seattle drinking water,adversely affects the water pressure at the airport during high usage of this well. This Pump is north of the designated AOMA proposed for testing.]3 The People should insist upon this Order comply with WAC 173-200, Washington State Discharge Permits as the Port of Seattle will be requesting renewal of their Permits soon. Lets do it right NOW.

Comment: Miller Creek,directly west of STIA, is a well known Recptor however, instead of protecting it, STIA operations have polluted it thru a series of man made water ways since 1976 with the second runway expansion.

Remedy: 4 [Find and remove the huge underground culverts which were placed in the ground on the west side of the airport during earlier

expansion at STIA, approximately 164th St. and 12th Ave. So. These culverts would definately be a contributing factor to water flow at STIA.] 4

Comment: 5 [Ecology understands that the issue of which entity is considered the local government land-use permitting authority at STIA is in litigation.

Remedy: This issue has been tested universally and, is also a well known fact that the city which contains the airport is the permitting, zoning and land-use authority. As a citizen of the city of SeaTac, I resent your presumptions that I'm governed by the Port of Seattle. Please correct this erronious statement.] 5

The Port of Seattle must be made to correct and remedy the terrible effects it has had on Southwest King County. No more cover ups with half done Fonsis, no more abandoning of contaminated areas. 6 [We need a systematic plan for clean up to be done right the first time. We need data, standards and methods.
A good example of one of their trickier covers is the reference to the Model Toxic Control Act (MTCA). STIA is not an MTCA site, so lets make sure were all operating from the same laws here for a change.] 6

Thank you once again for the opportunity to comment and please add me to the Public Comment mailing list. I look forward to this process.

Sincerely

Elizabeth A. Cairns

lc

cc: Paul Aqid
Project Coordinator for the Port of Seattle

Response to comments by Elizabeth A. Cairns
Comments were received in a letter dated 5/21/97.

Comment #1:
A copy of the Agreed Order was unavailable at the Valley View Library on May 16, 1997. A call to the Department of Ecology by the librarian at the number listed on the Fact Sheet resulted in a message: "We are on vacation for 14 days". As a consequence, the Public Comment period must be extended.

Response #1:
An Ecology staff person hand-delivered the Agreed Order and Public participation Plan to both the Valley View Library and the Burien Library and spoke with library staff about the documents. When Ecology was notified that the documents were missing from the Valley View Library, a second set of documents was delivered. The recorded message the librarian received would have provided the opportunity to dial zero, and then further assistance could have been received. Furthermore, two alternate numbers were listed in the Fact Sheet for Ecology personnel involved in the project that could have been called to provide a copy of the Agreed Order. The Public Comment period was not extended.

Comment #2:
The operating facilities at Sea-Tac Airport mentioned in the Agreed Order that have released hazardous substances are specified as being located in the aircraft operations and maintenance area (AOMA) part of the airport. These operating facilities cover much more area than the AOMA, and the entire facilities areas must be tested because the Qva aquifer is unconfined below the airport. The testing under the runways could be accomplished by using the "slant method".

Response #2:
Response to this comment is provided in Part 1 of the Responsiveness Summary.

The particular operating facilities that are known to have caused contamination in the unconfined Qva aquifer at the airport are the facilities that involve the maintenance of aircraft, and the transfer and storage of fuels. These facilities include hangar areas, pipelines, and large underground storage tank systems; and they are located within the AOMA as any map of the airport indicates.

Voluminous environmental information has been acquired over the years at Sea-Tac Airport and much is known about the hydrogeology and the nature of contaminant releases that impact the Qva aquifer. At this time, there is no rationale that warrants ubiquitous testing of groundwater throughout the airport outside the AOMA including beneath runways. The Agreed Order appropriately focuses on the most immediate risk associated with contamination in groundwater, which is beneath the AOMA of the airport. The results of the STIA groundwater study will possibly identify other areas of the airport inside and/or outside the AOMA that should be tested for groundwater contamination.

Comment #3:
The Highline water pump, which furnishes the City of Seattle drinking water, adversely affects the water pressure at the airport during high usage of this well. This pump is north of the designated AOMA proposed for testing.

Response #3:
The groundwater flow model encompasses both the Highline Well Field north of the airport as well as public water wells south of the airport. The effects that the pumping in these wells produce on groundwater flow in the Qva and other aquifers will be evaluated in the model. The effects that the pumping of water wells produce on the groundwater flow regime are called "capture zones". It is necessary to determine these pumping effects in order to determine the behavior of contamination in the aquifers beneath the airport in relation to these wells.

Comment #4:
Huge underground culverts were placed in the ground on the west side of the airport during earlier expansion of STIA. They should be found and removed because they are definitely a contributing factor to water flow at STIA.

Response #4:
The STIA groundwater study is concerned with groundwater flow in the regional aquifers beginning with the shallowest, unconfined aquifer (the Qva) and the pathways of contamination as carried by groundwater flow in these aquifers. Culverts would not have an effect on groundwater flow in these aquifers.

Comment #5:
The language in the Agreed Order that states "Ecology understands that the issue of which entity is considered the local government land-use permitting authority at STIA is in litigation" is erroneous because it implies that the Port of Seattle governs the citizens of the City of SeaTac.

Response #5:
The language referred to in the comment was a factual statement at the time of the draft Agreed Order in that land-use-permitting authority for Port-owned property at the airport was in litigation between the Port and the City of SeaTac. Local land-use permitting authority issues have since been resolved via the Interlocal Agreement between the Port of Seattle and the City of SeaTac dated September 4, 1997. There was never any issue about the Port being able to govern the citizens in the City of SeaTac in the resolution of these issues. The language in the final signed Agreed Order was changed however, which included deleting the language referenced in the comment, to reflect the more recent circumstance.

Comment #6:
A systematic plan to accomplish cleanup right the first time is needed which includes data, standards and methods. Since STIA is not a MTCA site, it is inappropriate to reference the Model Toxics Control Act.

Response #6:
Part 1 of the Responsiveness Summary provides response to this comment.

The Model Toxics Control Act (the result of a citizen initiative) is the cleanup regulation for addressing contamination after the fact, and there are no other state regulations by which cleanup can be accomplished. The MTCA mandates how to do cleanup "right" in that cleanup standards are mandated and in many ways, the requirements of MTCA drive what data are needed and the remedial methods that are used at particular sites. Any area where groundwater and / or soil contain contaminants above cleanup standards is a "MTCA site" and the requirements of MTCA apply throughout any such area.

As described in the Agreed Order, there are several individual MTCA sites within the confines of Sea-Tac airport where cleanup actions have been, and / or are ongoing. Cleanup actions at these airport MTCA sites are conducted by different potentially liable persons (PLPs), are on different time lines, and have different particulars regarding the contamination. Given this situation, Ecology has not to date considered Sea-Tac Airport in its entirety as a "MTCA site" from a regulatory standpoint, and therefore has not implemented a systematic airport wide approach to cleanup.

STATE REPRESENTATIVE
33rd DISTRICT
ROD BLALOCK

State of
Washington
House of
Representatives

TRANSPORTATION POLICY & BUDGET
ASSISTANT RANKING MINORITY MEMBER
CRIMINAL JUSTICE & CORRECTIONS

May 27, 1997

Tom Fitsimmons, Director
Department of Ecology
PO Box 47600
300 Desmond Dr.
Lacey, WA 98504-7600

Dear Mr. Fitzsimmons:

Thank you for the opportunity to comment on the Memorandum of Agreement between the Port of Seattle and the Department of Ecology to conduct a groundwater study at Sea-Tac International Airport.

I have several concerns regarding the study which are addressed below.

1.) 1 [I am concerned that the use of the Model Toxics Control Act to conduct the study may require less strict guidelines and limitations than the state's WAC 173-200, dealing with groundwater pollution. The MTCA is used for addressing past pollution and cleaning it up. This is certainly an issue here, but also at issue is the present and ongoing groundwater pollution that results from the airport. WAC 173-200 is more appropriate to address ongoing pollution issues but is apparently being ignored here.] 1

2.) 2 [Concentrating on pollution only within the 320 acre AOMA area may ignore pollution on the other 2200 acres of the airport property. The study proposes to address ground water flows under the AOMA and their possible contaminatory effects. Will the study include a similar analysis on pollution sites outside of the AOMA?

A.) Oil tanks from purchased homes remain buried on Port property. Will the effect of these tanks on the groundwater be addressed?

B.) Will groundwater pollution from deicing fluids be addressed?] 2

3.) 3 [What will be the result if the groundwater is found to be contaminated, but none of the surface or drinking-water sources are contaminated? Will the Port be required to clean up the groundwater?] 3 [What if the groundwater simply has not had sufficient time to "leach" into the surface or drinking-water sources? Would the Port be liable for future pollution of the surface or drinking-water sources?] 4

LEGISLATIVE OFFICE: 322 JOHN L. O'BRIEN BUILDING, PO BOX 40600, OLYMPIA, WA 98504-0600 • (360) 786-7834
HOTLINE DURING SESSION: 1-800-562-6000 • TDD: 1-800-635-9993
HOME PHONE: (206) 824-3541

4.) The section that deals with Pollution Prevention Activities includes better leak detection and prevention measures. [5] Are monetary penalties being considered for those responsible for leaks, or do they already exist? If the penalties already exist, what are they? [5]

Again, thank you for the opportunity to comment on the MOA. I look forward to hearing your response.

Respectfully Yours,

Rod Blalock
State Representative
33rd District, Position 1

cc: Roger Nye, DOE
Ms. Debi Desmarais, RCAA
Sen. Julia Patterson
U.S. Congressman Adam Smith
Ken Reid, ACC
Rep. Karen Keiser

Response to comments by State Representative Rod Blalock
Comments were received in a letter dated 5/27/97.

Comment #1:
The Agreed Order only concerns dealing with past pollution via the MTCA, and should also incorporate the provisions of WAC 173-200 to address the present and ongoing groundwater pollution that results from the airport.

Response #1:
Response to this comment is provided in Part 1 of the Responsiveness Summary.

The MTCA is a "reactionary" regulation and the only regulation that addresses remedial actions to deal with past contamination that has been released to the environment. Contamination that exceeds cleanup standards is "past pollution" whether it was released 10 years in the past or 10 minutes in the past. If the requirements for remedial actions (cleanup) of any kind are triggered, then the MTCA has to apply. The Agreed Order being implemented by Ecology's Toxics Cleanup Program (TCP) is an investigative remedial action to address risk issues of known and potential contamination in the Qva aquifer. It is appropriately beyond the scope of this MTCA Agreed Order to also incorporate whatever provisions of WAC 173-200 and all other "preventative" regulations that could apply at Sea-Tac Airport (excepting the Underground Storage Tank regulations, which are implemented by the TCP).

Comment #2:
Concentrating on pollution only within the 320 acre AOMA may ignore pollution on the other 2200 acres of the airport property. The study proposes to address groundwater flows under the AOMA and their possible contaminatory effects. Will the study include a similar analysis of groundwater on pollution sites outside of the AOMA such as: abandoned home heating oil tanks from purchased homes on Port property and deicing fluids?

Response #2:
Response to this comment is provided in Part 1 of the Responsiveness Summary.

The study will address groundwater flows in the aquifers under a large area encompassing the AOMA, airport, and considerable surrounding area. The study is limited to the permanent aquifers, and does not address the pathway of pollution from the surface to the aquifers. The study will not address alleged potential contamination in the aquifers from pollution sites outside the AOMA. Based on experience and much environmental data that has been acquired at Sea-Tac Airport over the years, the nature and sources of releases capable of impacting the shallow aquifer (Qva) in the hydrogeological environment of Sea-Tac Airport are apparent. At this time there are no known sources of pollution on Port property outside the AOMA that could apparently have the capacity to impact the Qva aquifer (including the heating oil tanks and pollution from deicing fluids). In response to this and other comments expressing concern about possible pollution sites outside the AOMA however, an attempt will be made to research

and identify possible historical sources of pollution outside the AOMA within the operating airport capable of impacting the Qva aquifer and posing risk to receptors. The AOMA is currently the only location of known impacts to the Qva aquifer on Port property, and the scope of the study will remain to evaluate the behavior of that groundwater contamination inside and outside of the AOMA.

Comment #3:
The question is asked as to whether the Port will be required to clean up the groundwater if the groundwater is found to be contaminated, but none of the surface or drinking water sources are contaminated.

Response #3:
Groundwater is known to be contaminated in some areas within the AOMA, and the groundwater study could lead to other areas of groundwater contamination. The Port and tenants at the airport (airlines and rental-car companies) are carrying out the cleanup requirements as per the MTCA at the known contaminated sites, and they are subject to the cleanup requirements of MTCA for any additional areas of groundwater contamination that could be discovered in the future.

The cleanup requirements of the MTCA apply to the media and location that is contaminated, and are not triggered by whether or not receptors could be contaminated further along the contaminant transport pathway. If the results of the groundwater study demonstrate the surface or drinking water sources are not and will not be contaminated, the contaminated groundwater is still subject to the remedial actions as required by the MTCA. The level of risk posed by contamination to the receptors can be taken into consideration when making subsequent decisions for these remedial actions however.

Comment #4:
The question is asked if the Port would be liable for future pollution of the surface or drinking water sources if the groundwater simply has not had sufficient time to "leach" into the surface or drinking water sources.

Response #4:
Yes, both the Port and any particular tenants at the airport operating facilities that had releases would be liable providing it was demonstrated that pollution from the airport could cause future pollution of the surface or drinking water sources.

Comment #5:
The question is asked if monetary penalties are being considered for those responsible for leaks and if penalties for leaks already exist what they are.

Response #5:
The term "leak" generally implies a low-volume release that goes on for a long period of time. Leaks often remain undetected because they are beneath the ground such as in underground storage tank (UST) fuel systems, and the ongoing amount of product that is constantly released is too small to be missed. The term "spill" generally implies a very

visible high-volume release that is a singular event. Leaks from UST systems and other facilities have caused most soil and groundwater contamination at Sea-Tac Airport. Surface spills from these facilities have caused most major impacts to surface waters, such as the spills that went into Des Moines Creek in the late 1980s.

Under cleanup regulations penalties can be imposed for failure to address the contamination caused by these releases, and under the UST regulations penalties can be imposed for failure to operate facilities in the required manner to prevent these releases. The only regulatory means to levy monetary penalties for these releases per se is under the water quality laws and regulations. There are generally not set penalties for the releases per se, and decisions whether or not to impose penalties and the amounts of penalties are based on the unique circumstances of each release.

Almost all penalties imposed by Ecology are for releases to surface waters because the circumstances regarding these releases (usually spills) are more evident and the environmental impacts of the contaminants released to surface waters are generally immediate and apparent. Furthermore, Ecology's funding sources and limited resources are focused on protection of surface waters. There were penalties imposed for the releases to Des Moines Creek.

The circumstances regarding releases to groundwater however are often not evident and the environmental impacts of the contaminants released to groundwater are generally not immediate or apparent. A particular facility may have ceased operations or even to exist before groundwater contamination is discovered, and the exact source(s) of groundwater contamination, particularly from leaks, often cannot be determined. There have been no monetary penalties imposed for the leaks in the past that have caused groundwater contamination at the airport and none are being considered at this time. Any monetary penalties levied associated with this Agreed Order would be for violations of the UST regulations.

JOAN E. COX
11922 30th S. W.
Seattle Washington 98146

June 2, 1997

Ms. Carla Skogg, Permit Coord.
Dept. of Ecology, Northwest Regional Office
3190 160th Ave. S.E.
Bellevue Wash.

Ms. Skoggs,

I am a long time resident of southwest King County. As such, I attended the Dept. of Ecology meeting at the Burien Library on May 21, 1997 regarding the Agreed Order for a ground water study and pollution prevention activities at SeaTac Airport necessary to construct the third runway. I applaud the Port and D.O.E. for a well planned agenda. Mr. Roger Nye provided an effective overview of the Agreed Order.

*It very quickly became evident [the Ageed Order has **SERIOUS** limitations that violate WAC 173-200.]* 1

* *[The limited scope of the study and model provide only approximations.* Only 14% of the airport is being studied.] 2
* *[The model chosen for the study is a PREJUDICIAL model. It is only as good a the info into it.]* 3
* *[The study looks at water levels. It NEEDS to look for contamination by fuel leaks as well as glycol runoffs.]* 4 *Glycol should be RECYCLED!*
* *[The study needs to define the nature, location and extent of contamination on the west side, not just the **KNOWN** contamination site on the southeast corner.]* 5
* *[It is **FALSE** to assume there is no problem for the Port if water flows to the west.]* 6
* *[All operations at the airport must be covered by State Discharge Permits]* 7
* *[NO MORE small, independent clean up. POLUTANTS must pay in full for clean up.]* 8
* *[WAC 173-200 dictates treatment of leaking fuel pipes. More frequent checks for leakage needs to occur.]* 9

* *WAC 173-200 dictates treatment of leaking fuel pipes. More frequent checks for leakage needs to occur.*

Any study and clean up needs a well defined, consistent approach. 10 [*WAC 173-200 requires public involvement in the study process as this is a PUBLIC HEALTH issue.*] 10

* *All ground water is a PRECIOUS RESOURCE AS PER WAC 173-200.*

* *Powerful politics should not be allowed to pollute our precious water resources.*

* *The QVE is a public aquifer not to be a garbage site for the Port*

Lastly, 11 [*the public was not included in the negiations between the Port of Seattle and the D.O.E. as per WAC 173-200.*] 11 *The Agreed Order as it exists today clearly demonstrates the D.O.E. capitulated to the narrow interests of the Seattle Port Commission at the expense of the general well being and safety of the people.*

Yours truly,

Joan E. Cox

Joan E. Cox

c.c. Gov. Locke

Response to comments by Joan E. Cox
Comments were received in a letter dated 6/2/97.

Comment #1:
The Agreed Order has serious limitations that violate WAC 173-200.

Response #1:
Response to this comment is provided in Part 1 of the Responsiveness Summary.

The Agreed Order is an investigative remedial action being carried out under the authority of the Model Toxics Control Act (MTCA) to evaluate risk possibly posed by known and potential contamination in the Qva aquifer at Sea-Tac Airport. The MTCA is a "reactive" regulation with requirements to address contamination once it has occurred, and the only state regulation under which remedial (cleanup) actions can be carried out. The Ground Water Quality Standards is a "preventative" regulation with requirements to address the prevention of groundwater from being contaminated. WAC 173-340 and WAC 173-200 are regulations that mandate requirements for two entirely different purposes, and one regulation does not contradict the other. The Agreed Order being carried out under the MTCA does not "violate" WAC 173-200.

Comment #2:
The limited scope of the study and model provide only approximations. Only 14% of the airport is being studied.

Response #2:
Response to this comment is provided in Part 1 of the Responsiveness Summary.

The groundwater flow model of the aquifers encompasses a large area surrounding Sea-Tac Airport. The large scale of the groundwater flow model will enable the movement of contamination originating within the AOMA to be determined in the aquifers including if it is transported outside the AOMA. The facilities with known potential to contaminate the regional Qva aquifer and the known contamination of this aquifer are located within the 14% of the airport identified as the AOMA, not throughout the entire airport.

Comment #3:
The model chosen for the study is a prejudicial model and is only as good as the information put into it.

Response #3:
There was no language that described the details of a specific model in the Agreed Order. Language in the Order states that "The modeling will utilize standard software and methodology to be selected by agreement of Ecology and the Port". All models are only as good as the information put into them. If the information put into the model is prejudicial, then the model is a prejudicial model. Factual information derived from a variety of sources of existing environmental information will be put into the models for the STIA groundwater study. The information put into the models will be described in

the final report for Phase I of the groundwater study and will be open to public comment and review.

Comment #4:
The study looks at water levels, but instead needs to look for contamination by fuel leaks as well as glycol runoffs.

Response #4:
The study must look at water levels in order to construct a groundwater flow model in order to determine contaminant transport pathways in order to evaluate risk to receptors possibly posed by contamination in groundwater including that by fuel leaks.

Contamination by fuel leaks has already been investigated for most facilities at Sea-Tac Airport that are or have been involved in the storage and transfer of fuels. This information is documented in reports received by the Department of Ecology. Investigations for contamination by fuel leaks at remaining facilities will be accomplished as a requirement of the Underground Storage Tank (UST) Regulations (WAC 173-360) or as part of this study. The Agreed Order requires that historical fuel and other operations be identified that could have caused contamination.

Areas most likely to be contaminated by glycols are in the gate areas where the glycols are initially sprayed on the aircraft, and at UST locations where glycols are stored. Some gate areas have been investigated for glycols during the course of fuel contamination investigations and no glycol concentrations reported to Ecology were greater than minimally detectable limits. The only known glycol contamination above cleanup standards in groundwater at the airport is associated with an UST system. The issue of direct glycol runoff to surface waters is not within the scope of the groundwater study and is addressed through other regulatory processes.

Comment #5:
The study needs to define the nature, location, and extent of contamination on the west side of the airport, not just the known contamination site on the southeast corner.

Response #5:
There has been no contamination reported to Ecology on the west side of the airport and the comment provides no explanation as to what the contamination could be on the west side of the airport that needs to be investigated. The only facility that Ecology is aware of on the west side of the airport that could be a potential source of contamination is the Weyerhaeuser aviation facility, which includes an aircraft hangar and UST systems. This facility is slated for closure pending construction of the Third Runway, and environmental investigations regarding that facility will take place at that time.

Comment #6:
It is FALSE to assume there is no problem for the Port if water flows to the west.

Response #6:
The issue is not whether there is a problem for the Port, but whether there is a problem for the environment. It would be preferable in terms of environmental risk if groundwater flows to the west because contamination carried in the groundwater would not be moving directly towards public water wells. Furthermore, it is much easier for any potentially liable person (PLP) to manage contamination within their own property boundaries, rather than dealing with contamination after it has migrated to other properties and/or impacted receptors. The requirements of MTCA must be met regardless of the groundwater flow direction.

Comment #7:
All operations at the airport must be covered by State Discharge Permits.

Response #7:
Response to this comment is provided in Part 1 of the Responsiveness Summary.

Comment #8:
No more small, independent clean up. POLUTANTS must pay in full for clean up.

Response #8:
The intent and meaning of this comment are not clear and no response is provided.

Comment #9:
WAC 173-200 dictates treatment of leaking fuel pipes. More frequent checks for leakage need to occur.

Response #9:
There is broad authority under WAC 173-200 to implement best management practices (BMPs) for facilities with a demonstrated potential to pollute groundwater. There are no specific requirements for leaking fuel pipes mentioned in WAC 173-200.

The underground storage tank (UST) regulations (WAC 173-360) mandate specific checks (including how often) for leakage from typical UST systems (tanks and piping). Larger facilities that store and carry fuel such as carrier pipelines and airport hydrant systems, and also certain types of USTs, for various reasons don't have standard requirements for leak detection by specific regulation and operate under technical BMPs. The airport hydrant systems at the airport have had the most problems with leakage, and in the past the airlines operating these facilities voluntarily tested these systems at Ecology's request beyond the normal BMPS they operated by. These voluntary tests were expensive, technically cumbersome and elaborate, and greatly interfered with the aircraft operations of the airlines that conducted the tests. These kinds of tests could not be done "frequently". All but one of the five original airport hydrant systems has now been closed however and a new fueling system with modern leak detection capability is in the planning stages at the airport. Furthermore, the Agreed Order mandates that the operations of existing fuel facilities not entirely subject to specific the leak detection requirements as per the UST regulations will be evaluated.

Comment #10:
WAC 173-200 requires public involvement in the study process, as this is a public health issue. The public was not included in the negotiations between the Port of Seattle and the Department of Ecology as per WAC 173-200.

Response #10:
Response to this comment is provided in Part 1 of the Responsiveness Summary.

The Agreed Order is a remedial action and as such can only be carried out under the authority of the MTCA. The public participation process under the MTCA applies, not the public participation process under WAC 173-200. Under the MTCA a formal public comment period is not required until negotiations are complete. The public participation process under the MTCA is streamlined in comparison to other regulations in order that cleanup actions can be carried out expeditiously.

TO: Roger Nye
Department of Ecology
3190 160th Avenue Southeast
Bellevue WA 98008-5452

4 June 1997
Ref: DOE_1

FROM: Wilton M. Whisler
121 South 168
Burien WA 98148-1611

Phone: 206-244-9277

SUBJECT: DOE's Agreed Order # 97TC-N122 for Sea-Tac Airport Groundwater Study

1 [A copy is attached of the *Water Right Claim* registered with DOE for a private well located at residential address 17000 First Avenue South, Seattle (now Burien). This well could potentially be impacted by contamination from within the Airport AOMA and should be selected for the subject study.

Contamination of this well could easily occur from the "shallow Qva aquifer" under the AOMA. This aquifer must surface along the west side of the Airport with a possible surface discharge into both Miller Creek and Walker Creek. Walker Creek headwaters on Airport property at about 12th Avenue South and South 176th Street. On its way to Puget Sound Walker Creek meanders into close proximity of our well on three sides, the east, south, and west.] 1

There are actually two wells at this site: one a dug well approximately 50 feet deep, and a drilled well (within the dug well) reportedly 250 feet deep. The water level is always within 20 feet of the surface and, at times, has been within 5 feet. I have pumped water from the dug-portion of the well and lowered the water-level to below a strata from which water could be seen cascading into the well.

I recommend the following:

- 2 [Amend *Agreed Order* Section IV, 1(d), as follows: To identify any publicly recorded, operational, private drinking water supply wells within ~~one~~ two miles of the AOMA that could potentially be impacted by contamination within the AOMA.] 2
- 1 [Include the well identified in the attached *Water Right Claim* as one of the wells for collecting ~~grou~~nd water elevation data outside of the AOMA.] 1

Respectfully yours,

Wilton M. Whisler

Attachmement: Copy of *Water Right Claim*, Registry No. 128632

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
WATER RIGHT CLAIMS REGISTRATION

WATER RIGHT CLAIM

RECEIVED DEPARTMENT OF ECOLOGY
JUN 28 74 147477
CASH ___ OTHER ___ NONE ___

1. NAME LEWIS ROSS DOUGHERTY

ADDRESS 17000 1st Avenue South

Seattle ZIP CODE 98148 PHONE NO. 24 2-7872

2. SOURCE FROM WHICH THE RIGHT TO TAKE AND MAKE USE OF WATER IS CLAIMED: Ground (SURFACE OR GROUND WATER)

W.R.I.A. 09 (LEAVE BLANK)

A. IF GROUND WATER, THE SOURCE IS a well (pulls flocculent sand)

B. IF SURFACE WATER, THE SOURCE IS

3. THE QUANTITIES OF WATER AND TIMES OF USE CLAIMED:

A. QUANTITY OF WATER CLAIMED 20 GPM PRESENTLY USED none ~~from well~~ (CUBIC FEET PER SECOND OR GALLONS PER MINUTE)

B. ANNUAL QUANTITY CLAIMED emergency supply PRESENTLY USED none from well (ACRE FEET PER YEAR)

C. IF FOR IRRIGATION, ACRES CLAIMED emergency supply for ~~5 acres less roads~~ PRESENTLY IRRIGATED none from well

D. TIME(S) DURING EACH YEAR WHEN WATER IS USED: presently use King County Water District #49

4. DATE OF FIRST PUTTING WATER TO USE: MONTH ? YEAR about 1920

5. LOCATION OF THE POINT(S) OF DIVERSION/WITHDRAWAL: located on property described as follows: West 330 feet of the NW ¼ of the NW ¼ of the S W ¼ less North 452 feet less county roads of S 29, T 23N, R 4E

~~FEET~~ ca. 165 feet FROM THE center line of 1st Ave. South CORNER OF SECTION

BEING WITHIN ______ OF SECTION 29, T. 23 N., R. 4 E (E. OR W.) W.M.

IF THIS IS WITHIN THE LIMITS OF A RECORDED PLATTED PROPERTY, LOT ______ BLOCK ______ OF

(GIVE NAME OF PLAT OR ADDITION)

6. LEGAL DESCRIPTION OF LANDS ON WHICH THE WATER IS USED: West 330 feet of NW¼ of NW¼ of SW¼ less 45 North 452 feet less county roads, Sec. 29, T 23N, R 4E; AND North 452 feet of the West 330 feet of NW¼ of the NW¼ of the SW¼ less county roads of Sec 29, T 23N, R 4E.

COUNTY KING

7. PURPOSE(S) FOR WHICH WATER IS USED: ~~Emergency supply for domestic use and garden irrigation~~ for three houses and five acres; watering of livestock

8. THE LEGAL DOCTRINE(S) UPON WHICH THE RIGHT OF CLAIM IS BASED: ~~Riparian~~ appropriation

DO NOT USE THIS SPACE

THE FILING OF A STATEMENT OF CLAIM DOES NOT CONSTITUTE AN ADJUDICATION OF ANY CLAIM TO THE RIGHT TO USE OF WATERS AS BETWEEN THE WATER USE CLAIMANT AND THE STATE OR AS BETWEEN ONE OR MORE WATER USE CLAIMANTS AND ANOTHER OR OTHERS. THIS ACKNOWLEDGEMENT CONSTITUTES RECEIPT FOR THE FILING FEE.

DATE RETURNED THIS HAS BEEN ASSIGNED WATER RIGHT CLAIM REGISTRY NO.

FEB 4 '75 126637

DIRECTOR - DEPARTMENT OF ECOLOGY

I HEREBY SWEAR THAT THE ABOVE INFORMATION IS TRUE AND ACCURATE TO THE BEST OF MY KNOWLEDGE AND BELIEF.

X Jean Dougherty Whisler

DATE June 26, 1974

IF CLAIM FILED BY DESIGNATED REPRESENTATIVE, PRINT OR TYPE FULL NAME AND MAILING ADDRESS OF AGENT BELOW.

Jean Dougherty Whisler (Mrs. Wilton M.)
121 South 168th Street
Seattle Washington 98148

[X] ADDITIONAL INFORMATION RELATING TO WATER QUALITY AND/OR WELL CONSTRUCTION IS AVAILABLE.

A FEE OF $2.00 MUST ACCOMPANY THIS WATER RIGHT CLAIM

RETURN ALL THREE COPIES WITH CARBONS INTACT, ALONG WITH YOUR FEE TO:
DEPARTMENT OF ECOLOGY
WATER RIGHT CLAIMS REGISTRATION
OLYMPIA, WASHINGTON 98504

Response to comments by Wilton M. Whisler
Comments were received in a letter dated June 4, 1997.

Comment #1:
A private water well located at 17000 First Avenue South in Burien could potentially be impacted by contamination in the AOMA being transported to the west in the Qva aquifer. This well should consequently be included in the groundwater study and be used as a well for collecting groundwater elevation data outside the AOMA.

Response #1:
The situation concerning the well described in this comment illustrates why the groundwater study is being done. The well is located about 1.5 miles west of MTCA sites within the AOMA and is well within the study area. According to groundwater data from within the localized extent of the MTCA sites, the Qva aquifer flows generally to the west. Known and possible unknown contamination in groundwater beneath the AOMA is most likely being transported towards this well in the Qva aquifer. However, the known extent of contamination in the Qva aquifer presently does not extend outside the AOMA.

The purpose of the groundwater study is to evaluate the risk the contamination possibly poses to this well and the other receptors mentioned in the Agreed Order. In evaluating risk to this well for example, answers to questions such as the following must be determined: Will contamination be attenuated in the subsurface before ever reaching the well? Will flow in the Qva aquifer carry contamination directly to the well, or could the well be too far north? If contamination could reach the well, how long would it take to get there and at what levels?

Ecology appreciates the offer to have access to this well for groundwater elevation data outside the AOMA. The well is too far outside the AOMA to be included in the representative set of wells as mentioned the Agreed Order however. The purpose of the representative set of wells is to precisely determine the flow of the Qva aquifer within the AOMA and near vicinity since the contamination originates within the AOMA. If well log data exists for this well, the data will be used along with geological data from many other wells and borings to construct the groundwater flow model. Later on during Phase II of the groundwater study it could be appropriate to collect groundwater elevation and/or chemical data from this and other wells.

Comment #2:
Section IV, 1(d) of the Agreed Order should be amended to state that publicly recorded, operational private drinking water supply wells within two miles (rather than one mile) of the AOMA will be identified that could potentially be impacted by contamination within the AOMA.

Response #2:
The part of the Agreed Order alluded to in the comment is included in the section that states the purposes for the research of existing information that would be accomplished as an initial part of the study. The rationale for researching the number of private drinking water supply wells within one mile of the AOMA that could potentially be impacted by contamination within the AOMA was to get a concept of the population of private wells potentially most at risk. If the groundwater study identifies areas of private property outside the airport that could have groundwater contamination from the airport, every effort will be made to identify any private drinking water wells within these areas regardless of distance from the AOMA or whether the wells have been publicly recorded.